

Company: CAERUS OPERATING LLC

Well: Chevron 12A-17

Field: Grand Valley

County: Garfield State: Colorado

Slim Cement Mapping Tool

CBL-VDL

Location: Lot 1 Sec. 17 T6S R96W
 Well: Chevron 12A-17
 Company: CAERUS OPERATING LLC

Location:	Lot 1 Sec. 17 T6S R96W	Elev.:	K.B. 5613.00 ft
Permanent Datum:			G.L. 5583.00 ft
Log Measured From:			D.F. 5613.00 ft
Drilling Measured From:		Ground Level	5583.00 f
API Serial No.	05-045-23243	Kelly Bushing	30.00 ft
		Kelly Bushing	above Perm. Datum
Section:	17	Township:	6S
		Range:	96W

Logging Date 23-Jul-2017

Run Number ONE

Depth Driller 7718.00 ft

Schlumberger Depth 7718.00 ft

Bottom Log Interval 7700.00 ft

Top Log Interval 500.00 ft

Casing Fluid Type Water

Salinity

Density 10 lbm/gal

Fluid Level 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 6.00 in

From 0.00 ft

To 7718.00 ft

Casing/Tubing Size 4.5 in

Weight 11.6 lbm/ft

Grade N/A

From 0.00 ft

To 7718.00 ft

Max Recorded Temperatures

Logger on Bottom 23-Jul-2017 14:41:00

Unit Number OSL-CAR2 2161 Ft. Morgan

Recorded By L. Awalt

Witnessed By

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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9.4 Log (SCMT_Amp_Image_1)

9.5 Parameter Listing

10. ONE Main

10.1 Integration Summary

10.2 Software Version

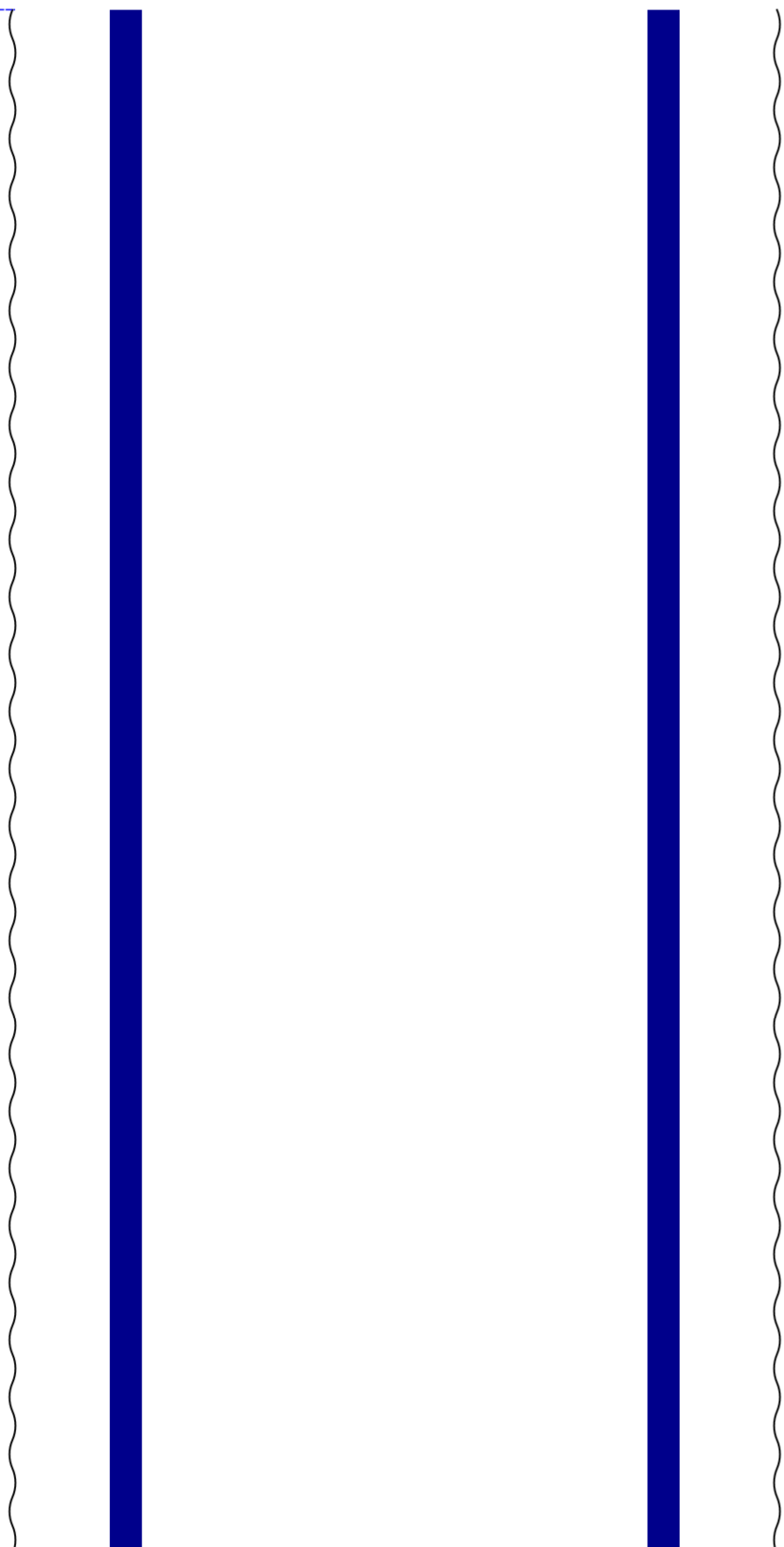
10.3 Composite Summary

10.4 Log (SCMT_VDL_Image_1)

Well Sketch

Driller Depth

0.00 ft



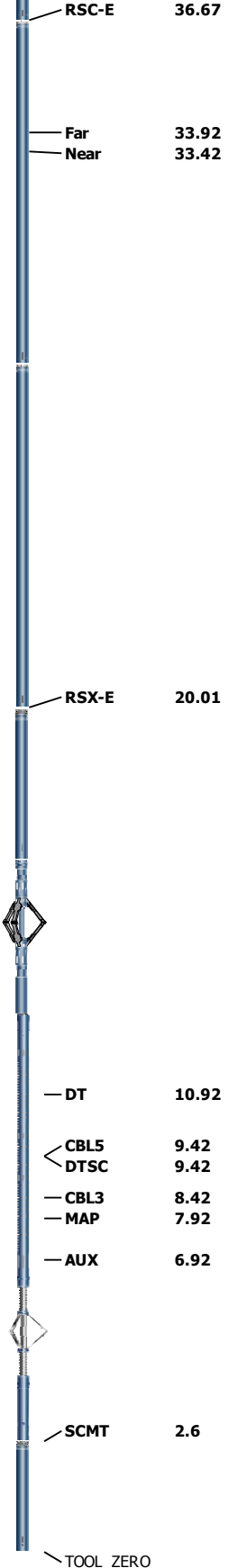


Borehole Size/Casing/Tubing Record

Bit					
Bit Size (in)	6				
Top Driller (ft)	0				
Top Logger (ft)	0				
Bottom Driller (ft)	7718				
Bottom Logger (ft)	7718				
Casing					
Size (in)	4.5				
Weight (lbm/ft)	11.6				
Inner Diameter (in)	4				
Grade	N/A				
Top Driller (ft)	0				
Top Logger (ft)	0				
Bottom Driller (ft)	7718				
Bottom Logger (ft)	7718				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks
Equip name	Length	MP name	Offset	<p>Thank you for choosing Schlumberger!</p> <p>Log run for cement and formation evaluation.</p> <p>Tool run centralized as per tool sketch</p> <p>Repeat pass done at surface following main pass, GR expected to be High</p> <p>Crew: Oscar Silva, Kenneth Ellis, Gary Lapp</p>
LEH-QT	55.37			
AH-63	52.45			
AH-79	52.13			
PSTP-A:382	51.3	GR	47.59	
3		PSTC	47.3	
PSC-A		PSTC Tool	0.00	
PSTC-A:3733		String Bot		
PBMS-A:3823		tom		
Sapphire 10kP		Temperatu	44.51	
SI		re		
		Sapphire P	44.4	
		ressure		
		CCL	43.78	
		PBMS	43.03	
RST-C:343	43.03			
RSCH-A:412				
RSC-E:416				
RSS-A:374				
MNTR-F:1254				
RSXH-A:342				
RSX-E:343				



SCMT-CB:82 20.01
84
 SECH-CA
 SCMC-CA:808
 9
 CMIR-AG
 SCMS-CB:828
 4
 SCMx-CA:820
 5

Lengths are in ft
 Maximum Outer Diameter = 3.375 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO

Depth Summary

	ONE		
Depth Measuring Device			
Type	IDW-B		
Serial Number			

Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

Tension Device			
Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

Logging Cable			
Type	7-39P-LXS		
Serial Number			
Length	2000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

ONE:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well		
Rig Up Length At Surface			
Rig Up Length At Bottom			
Rig Up Length Correction			
Stretch Correction			
Tool Zero Check At Surface			

ONE

Main

Software Version

Acquisition System	Version
Maxwell 2017 SP2	7.2.87778.3100

Pass Summary

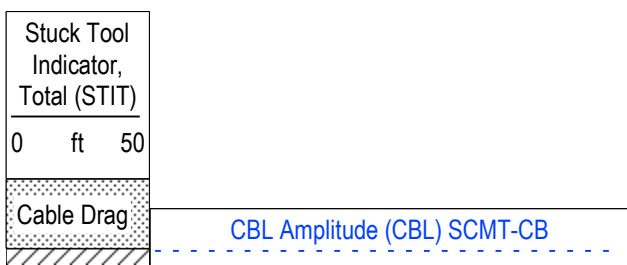
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	482.76 ft	7708.53 ft	23-Jul-2017 2:11:36 AM	23-Jul-2017 4:28:44 AM	ON	7.91 ft	Yes

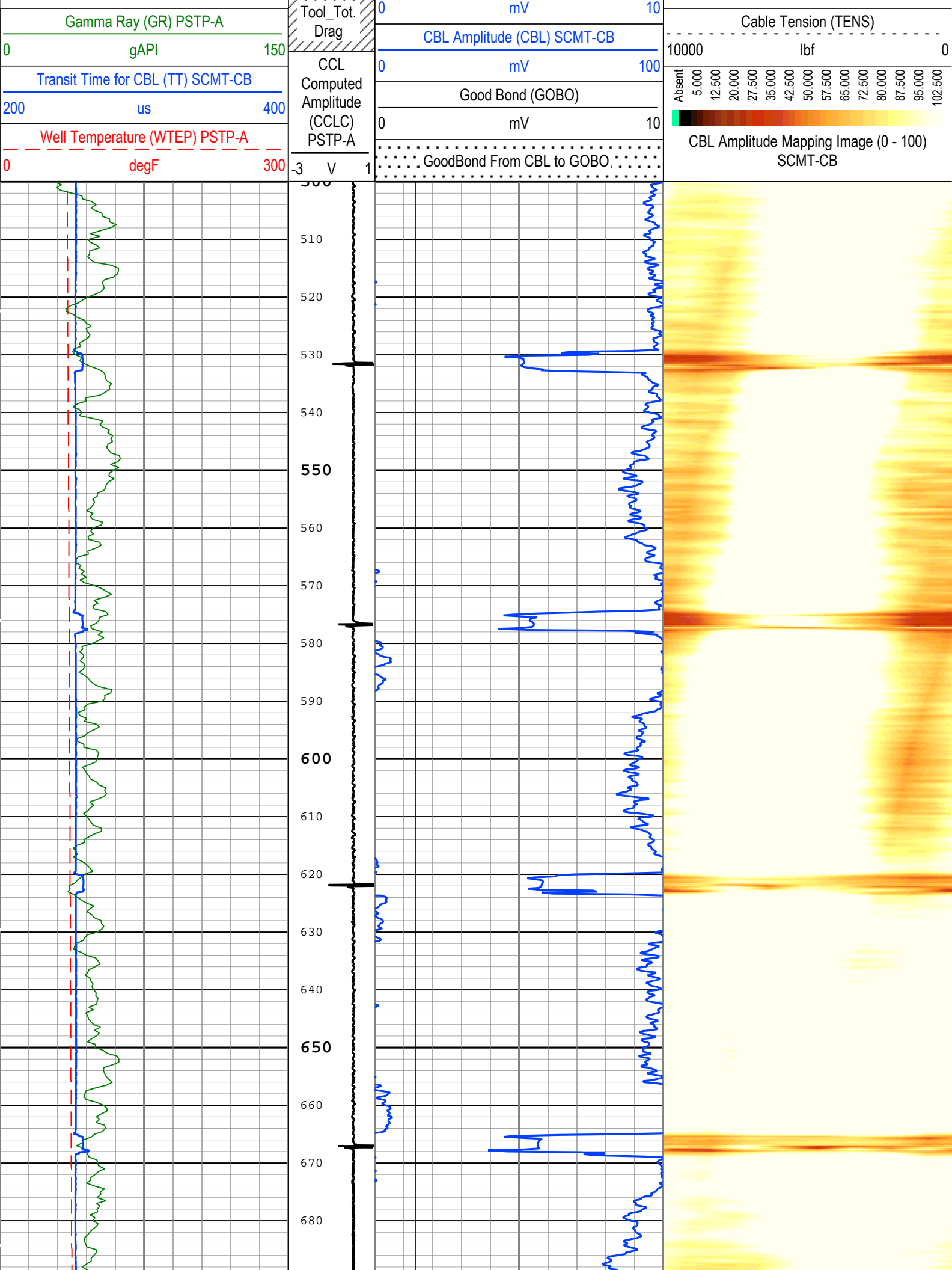
All depths are referenced to toolstring zero

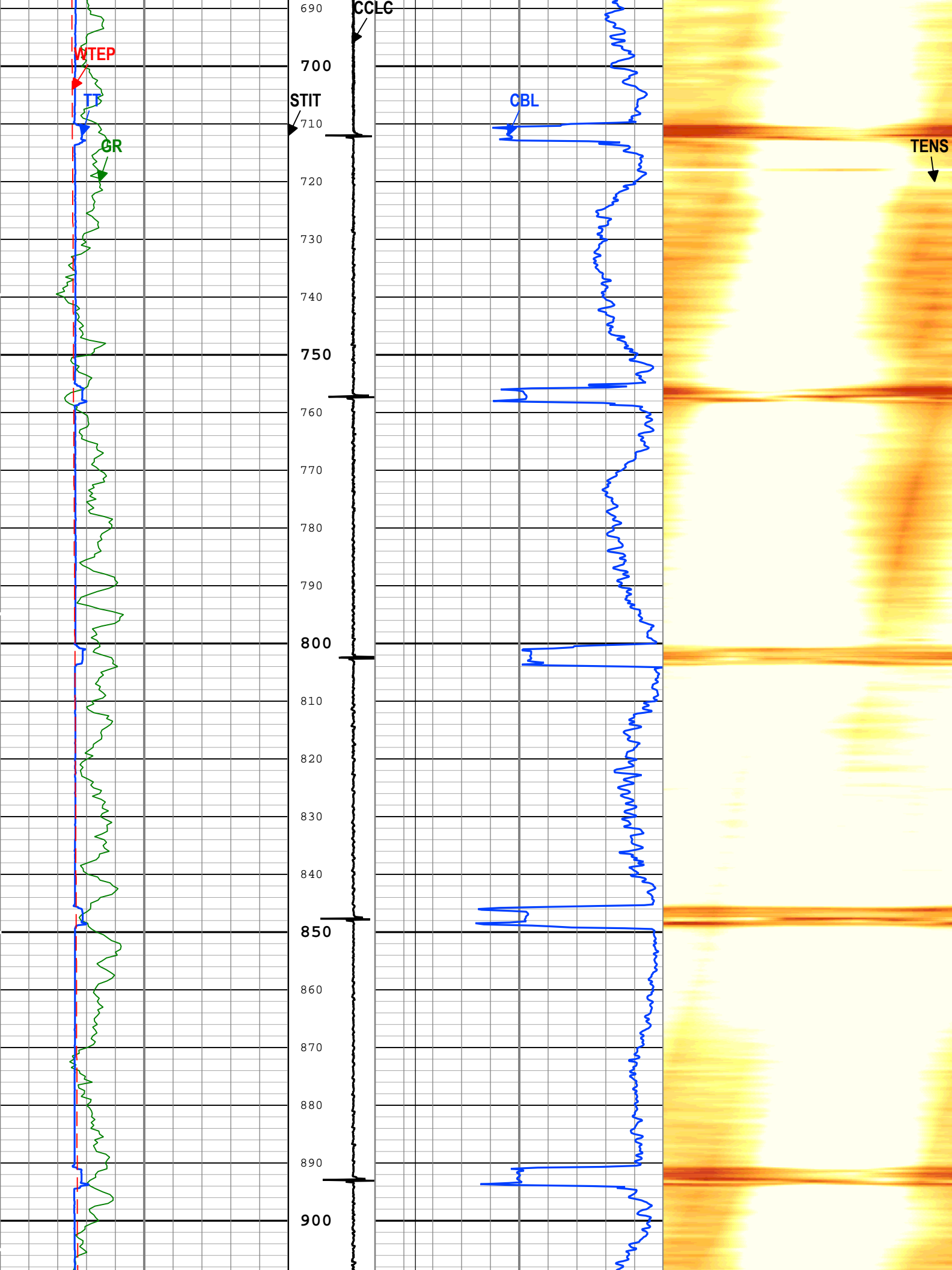
Log Company:CAERUS OPERATING LLC Well:Chevron 12A-17
ONE: Log[3]:Up:S002

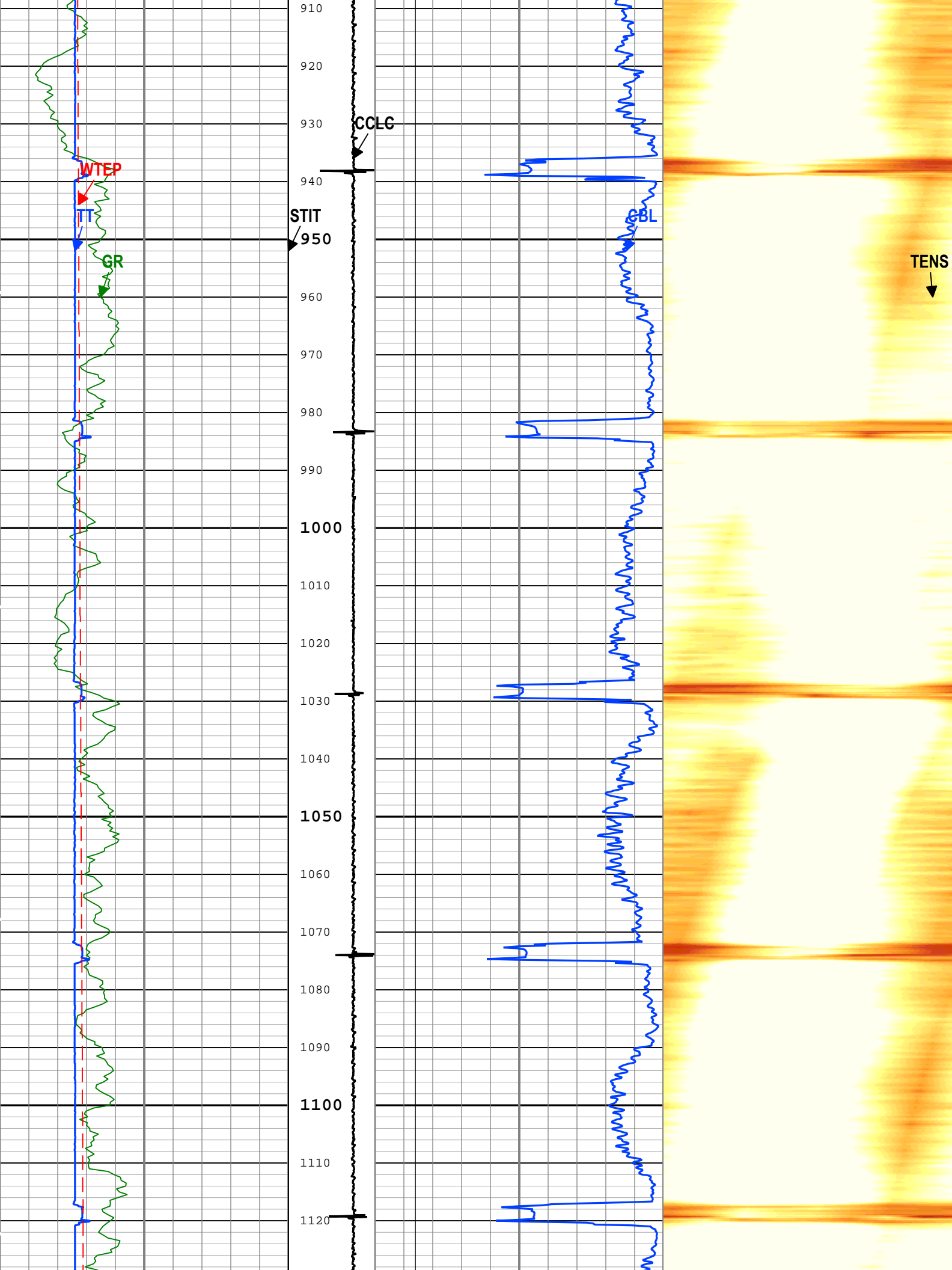
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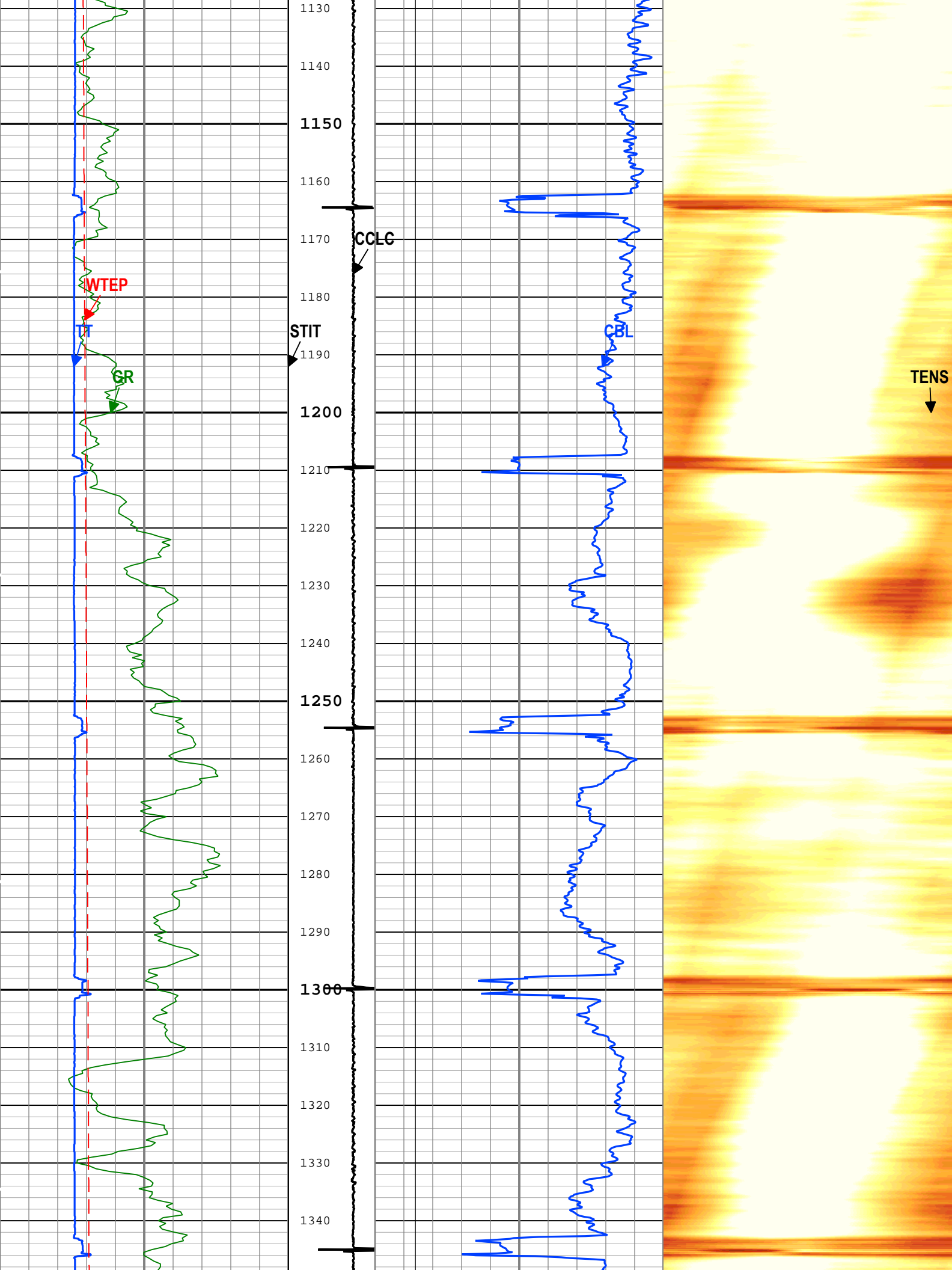
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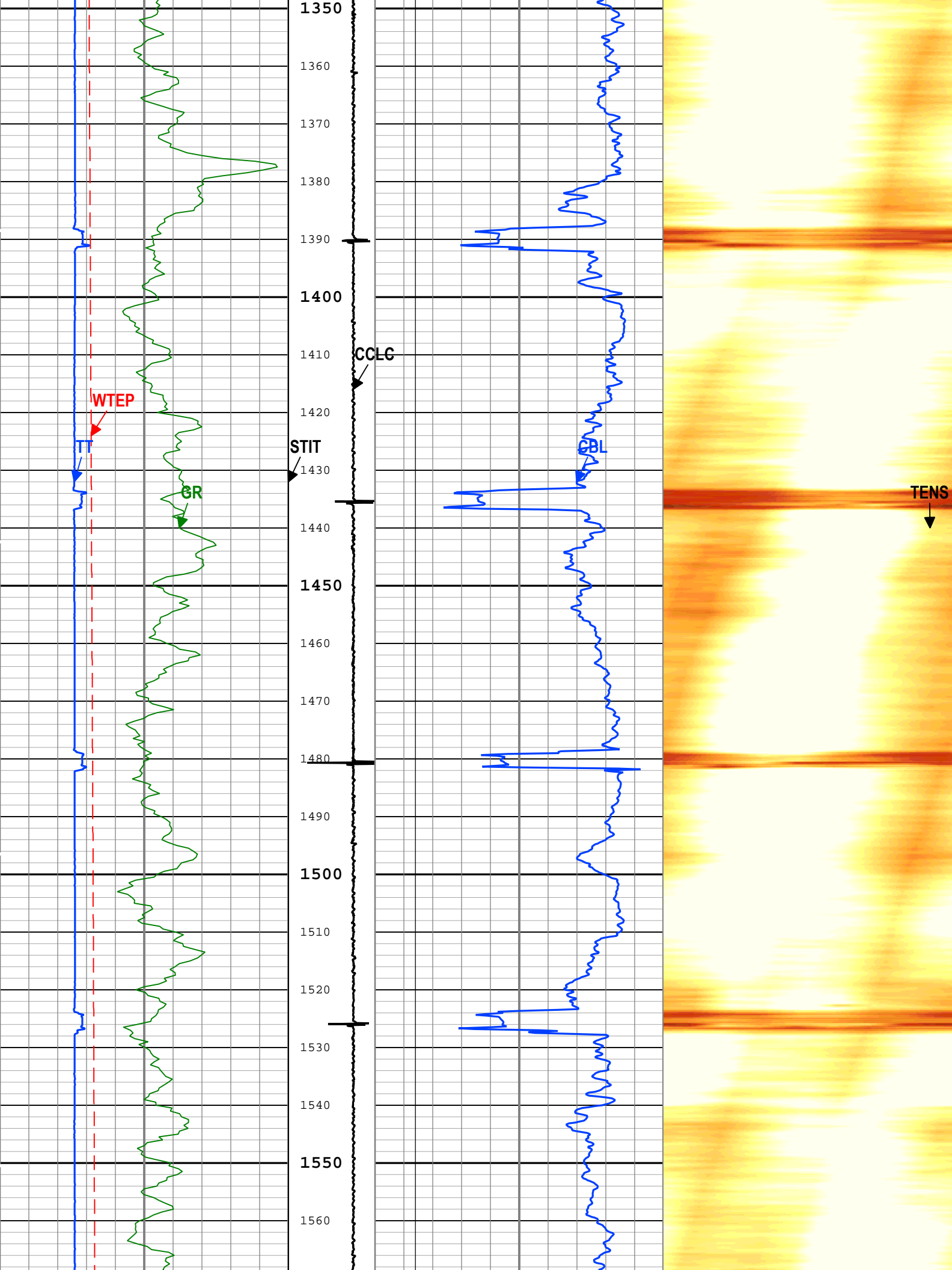


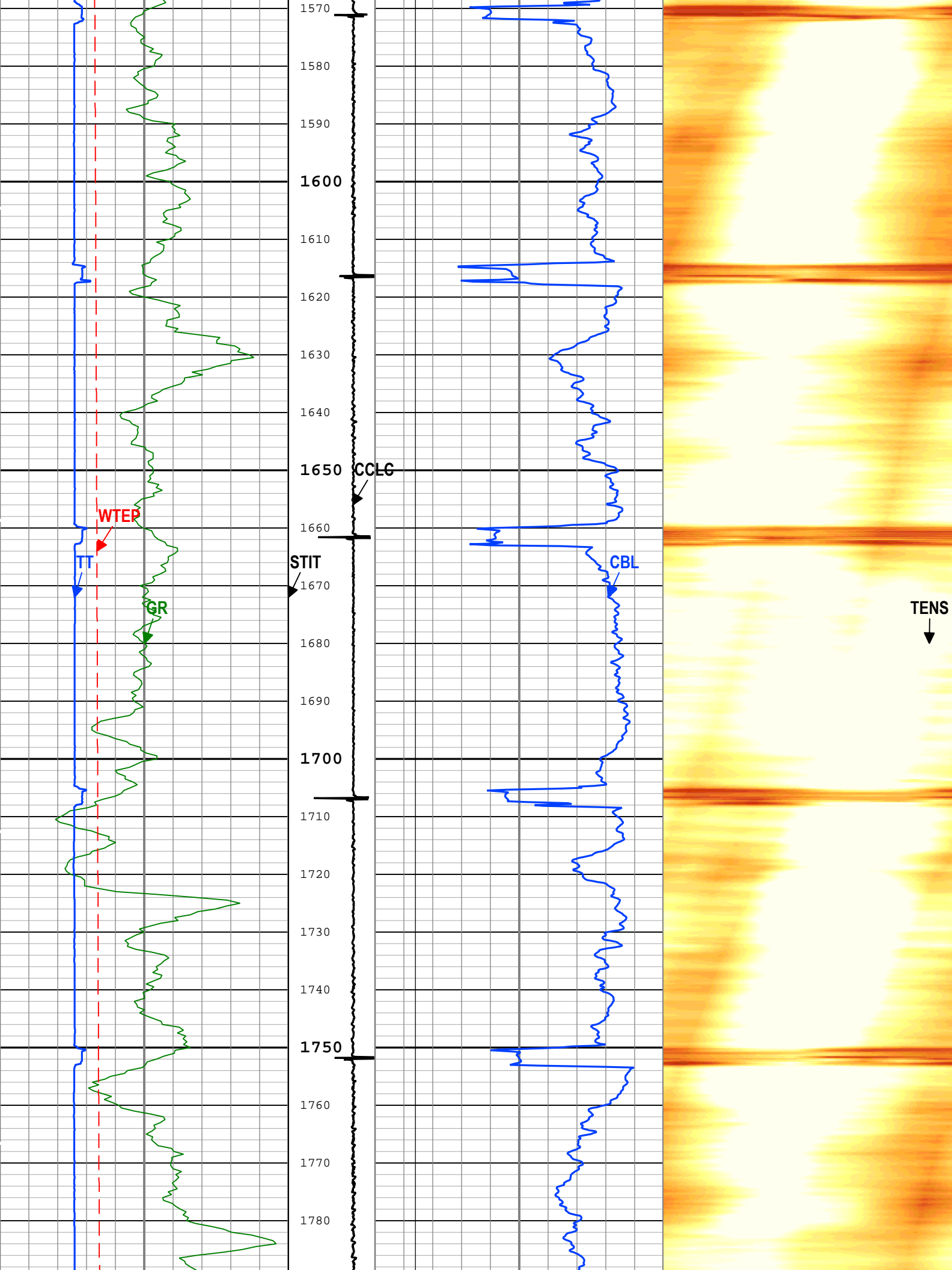


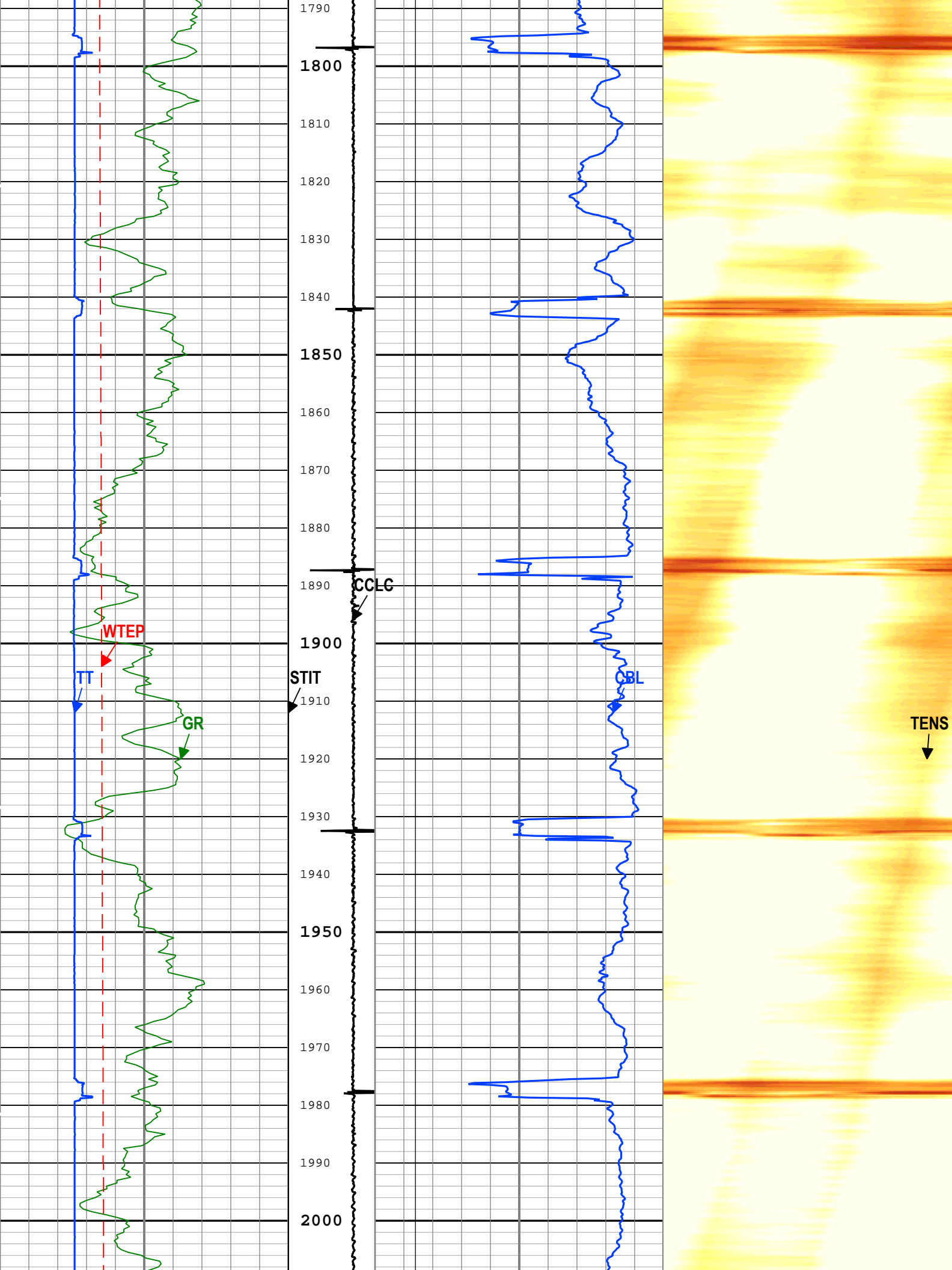


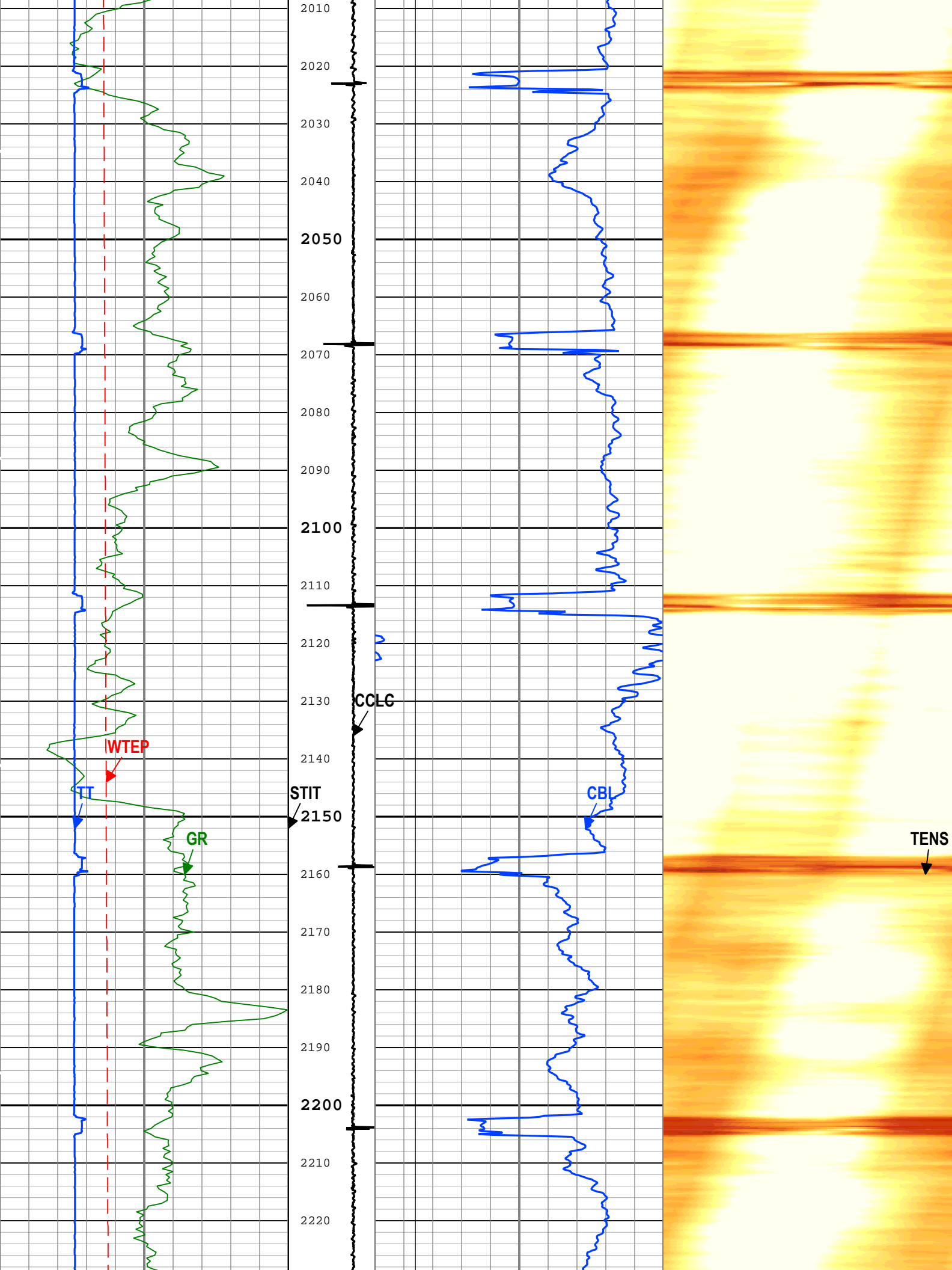


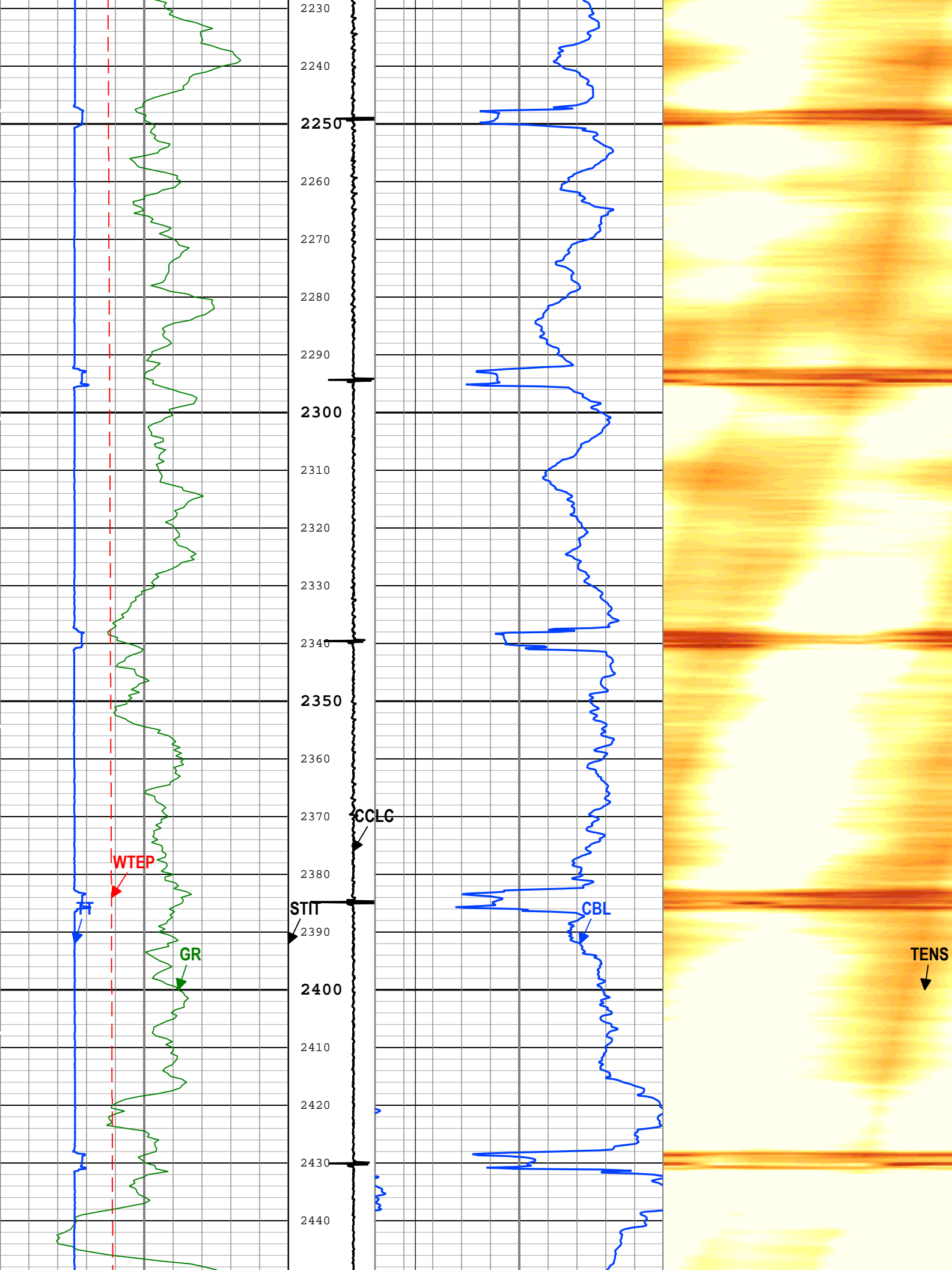


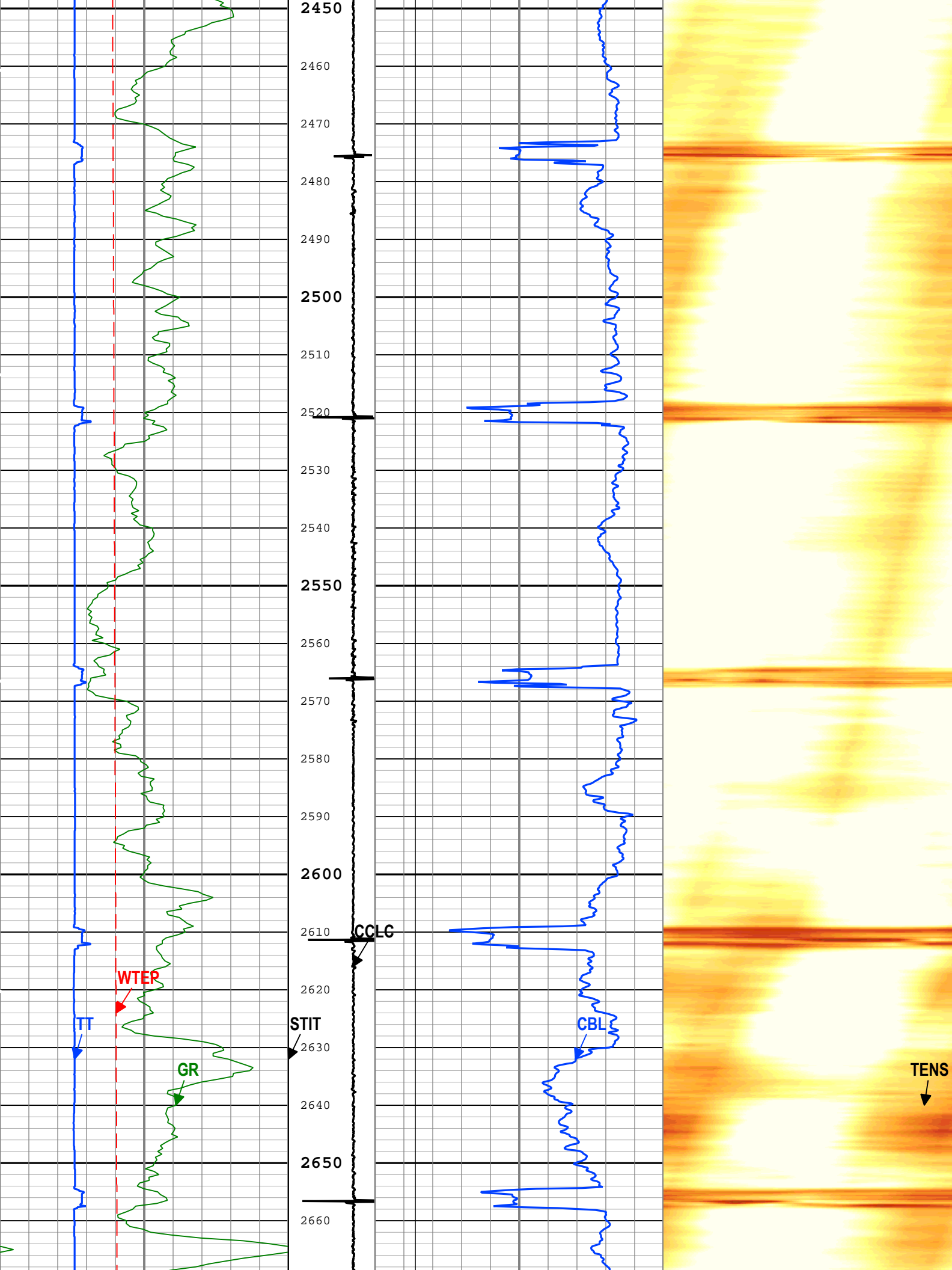


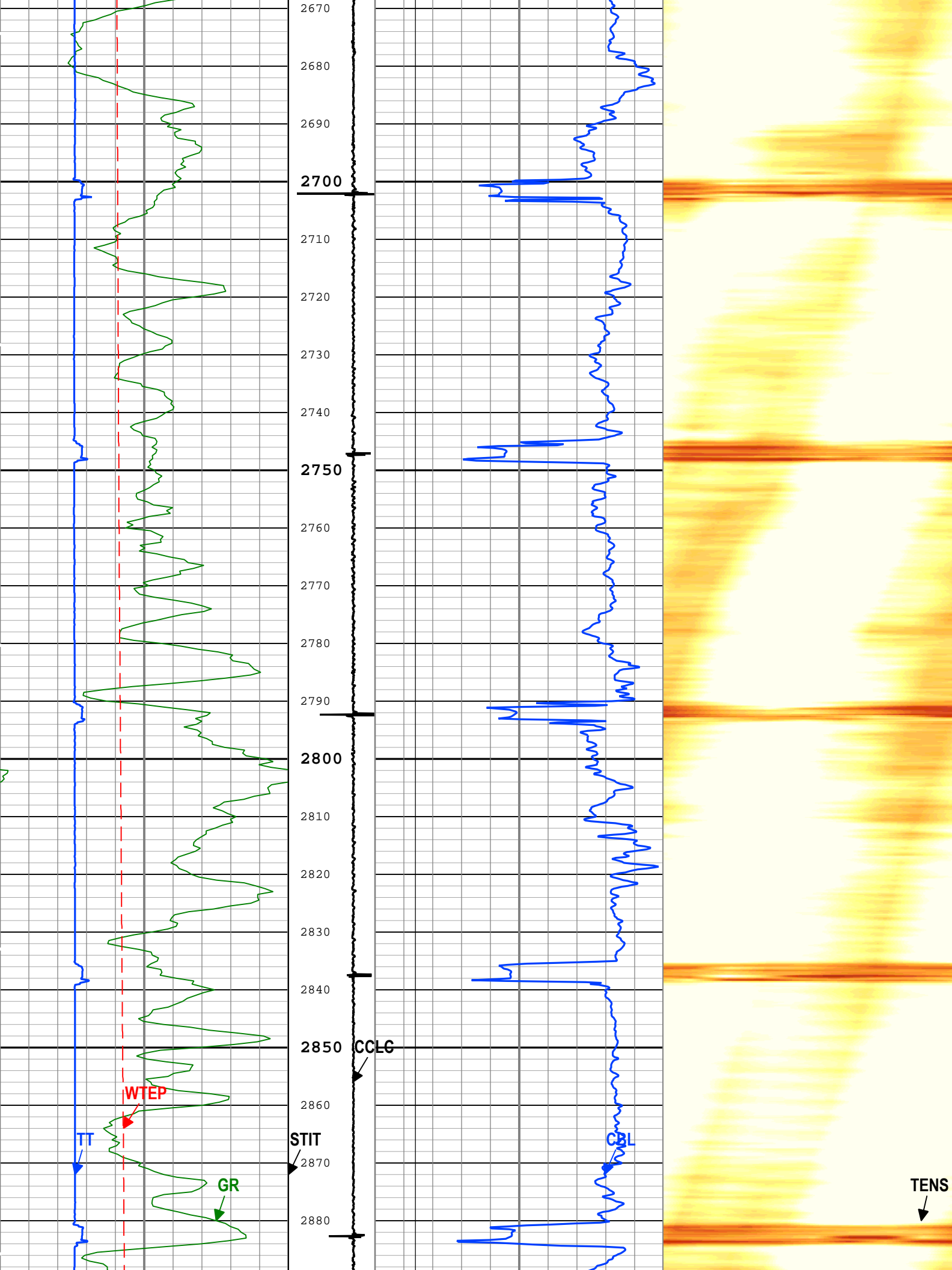


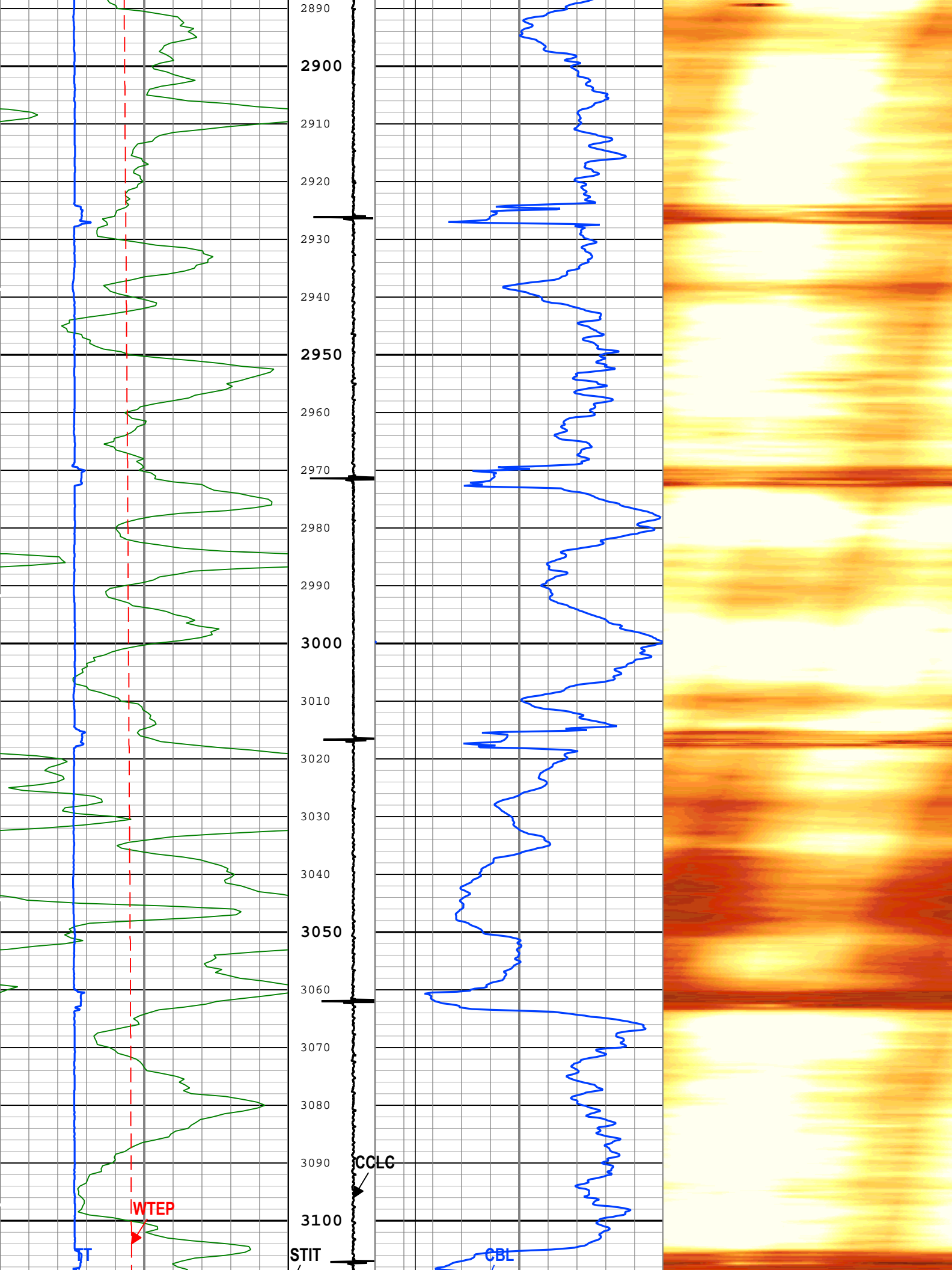


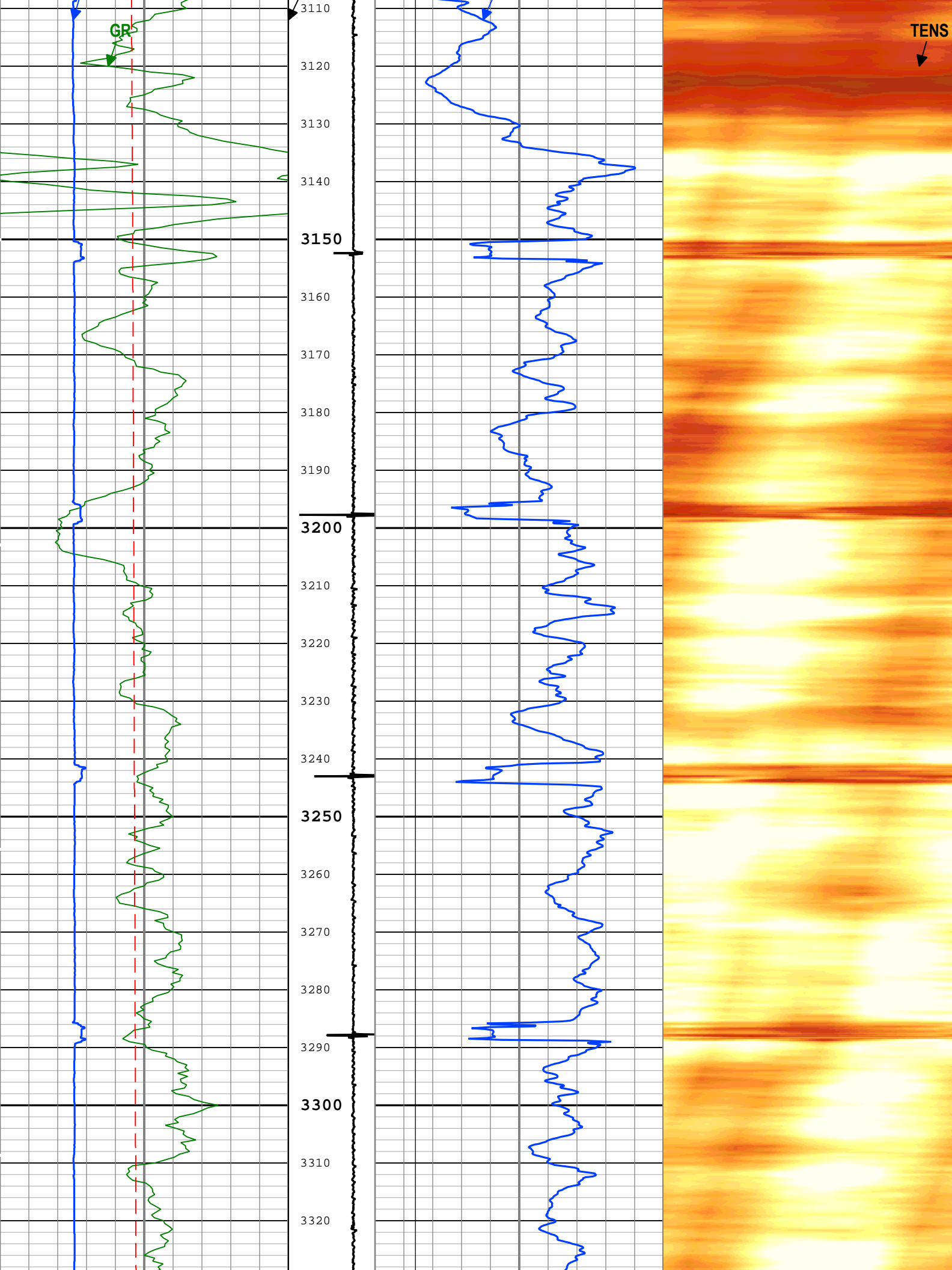


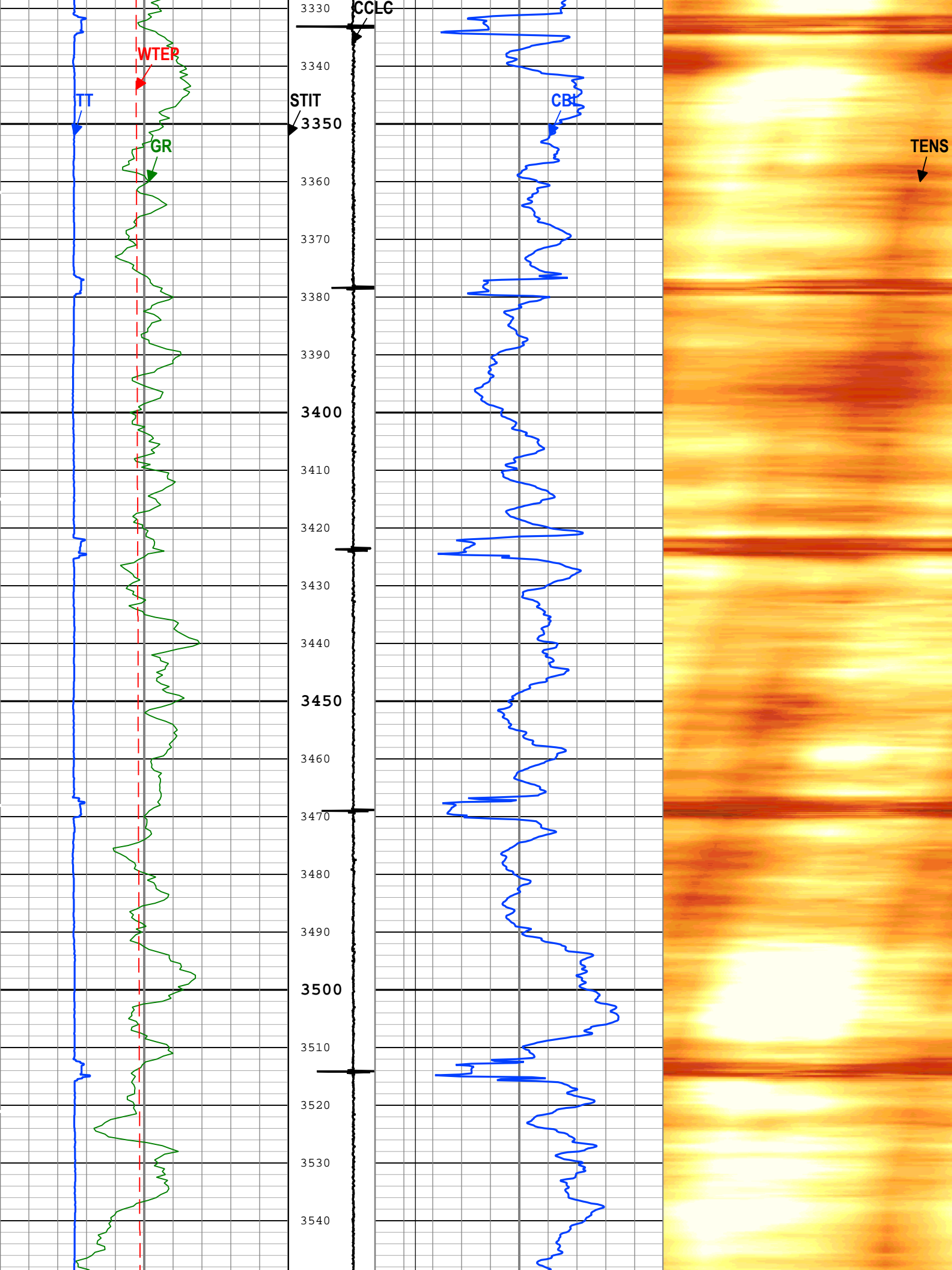


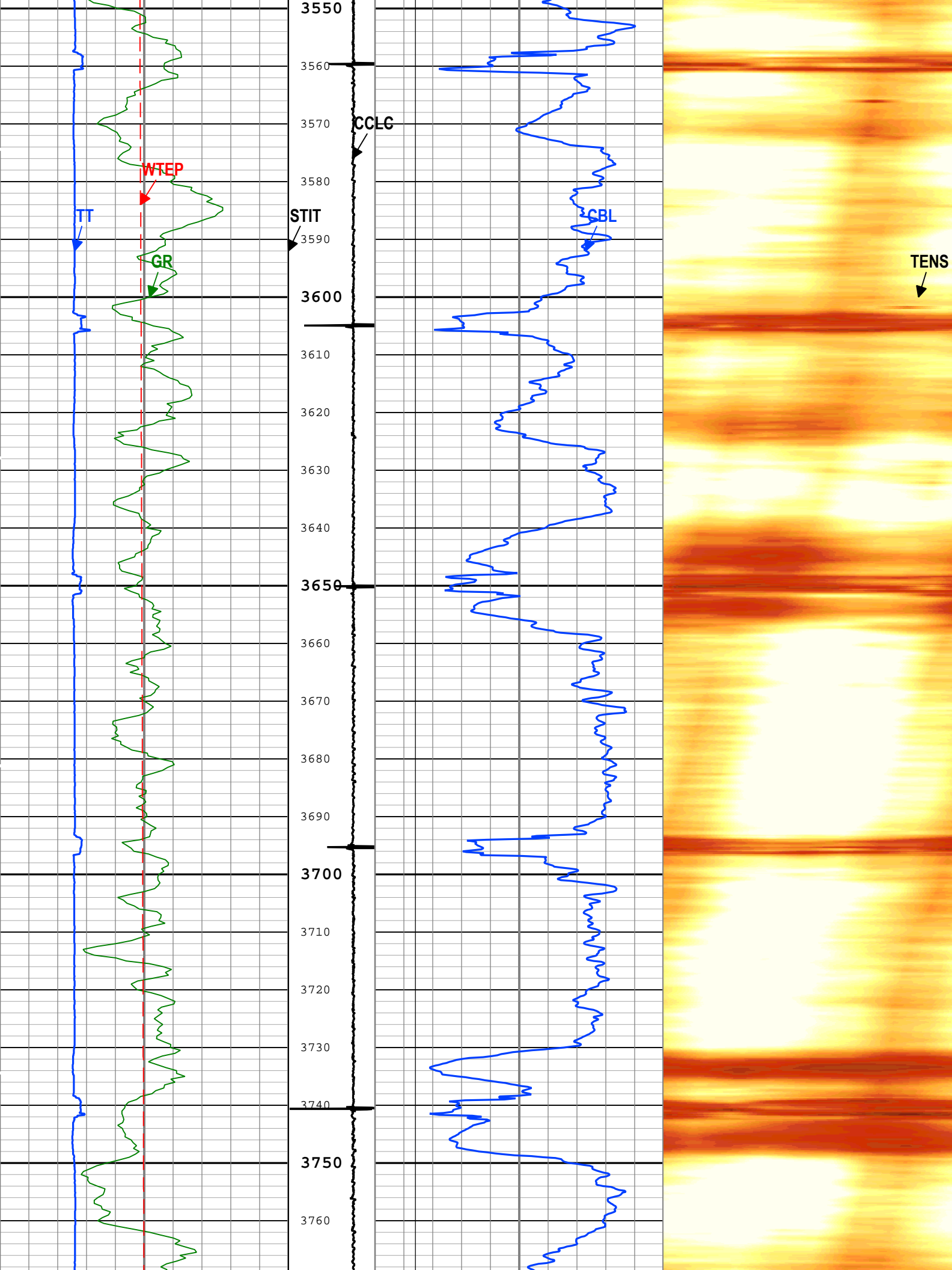


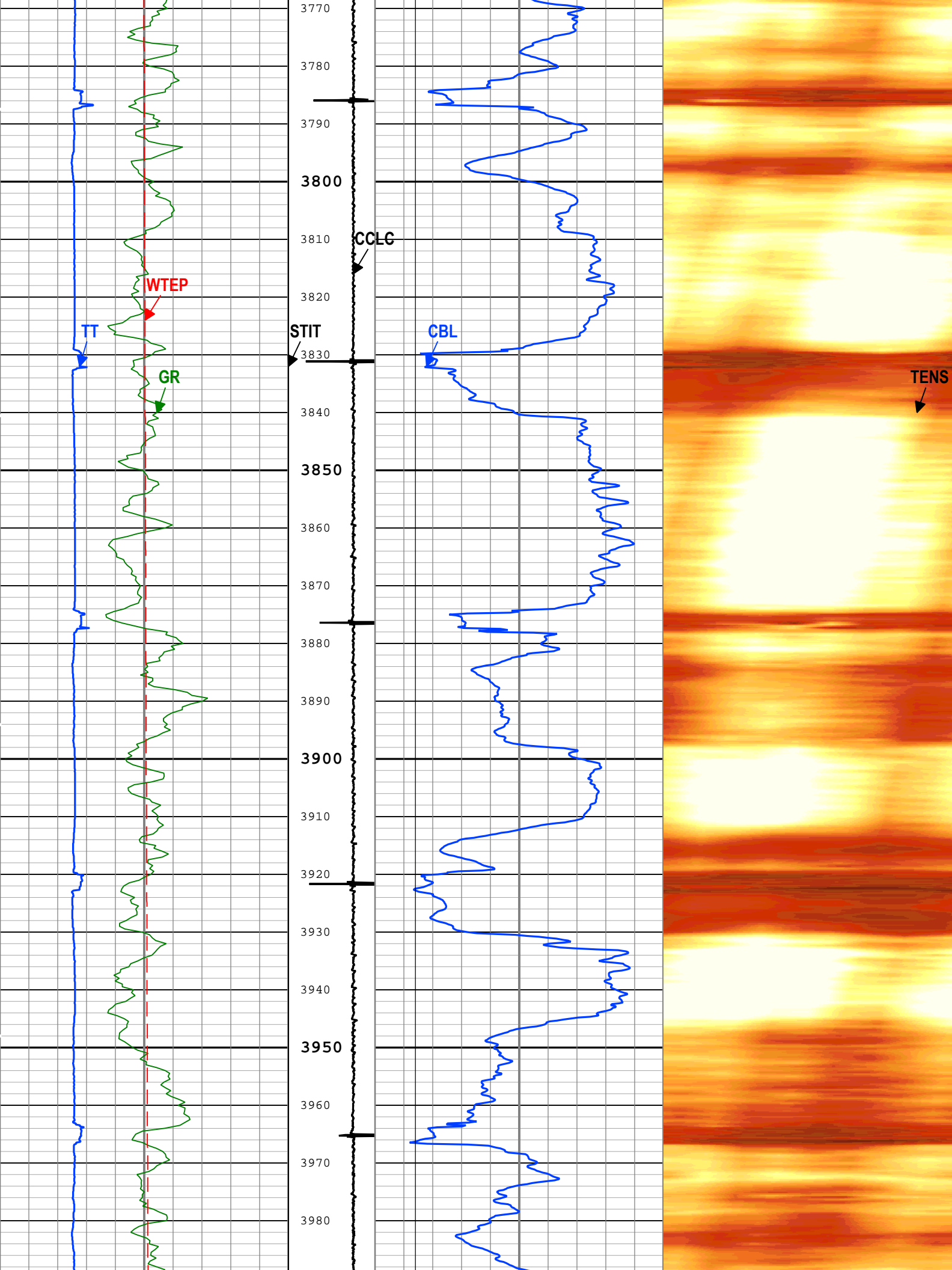


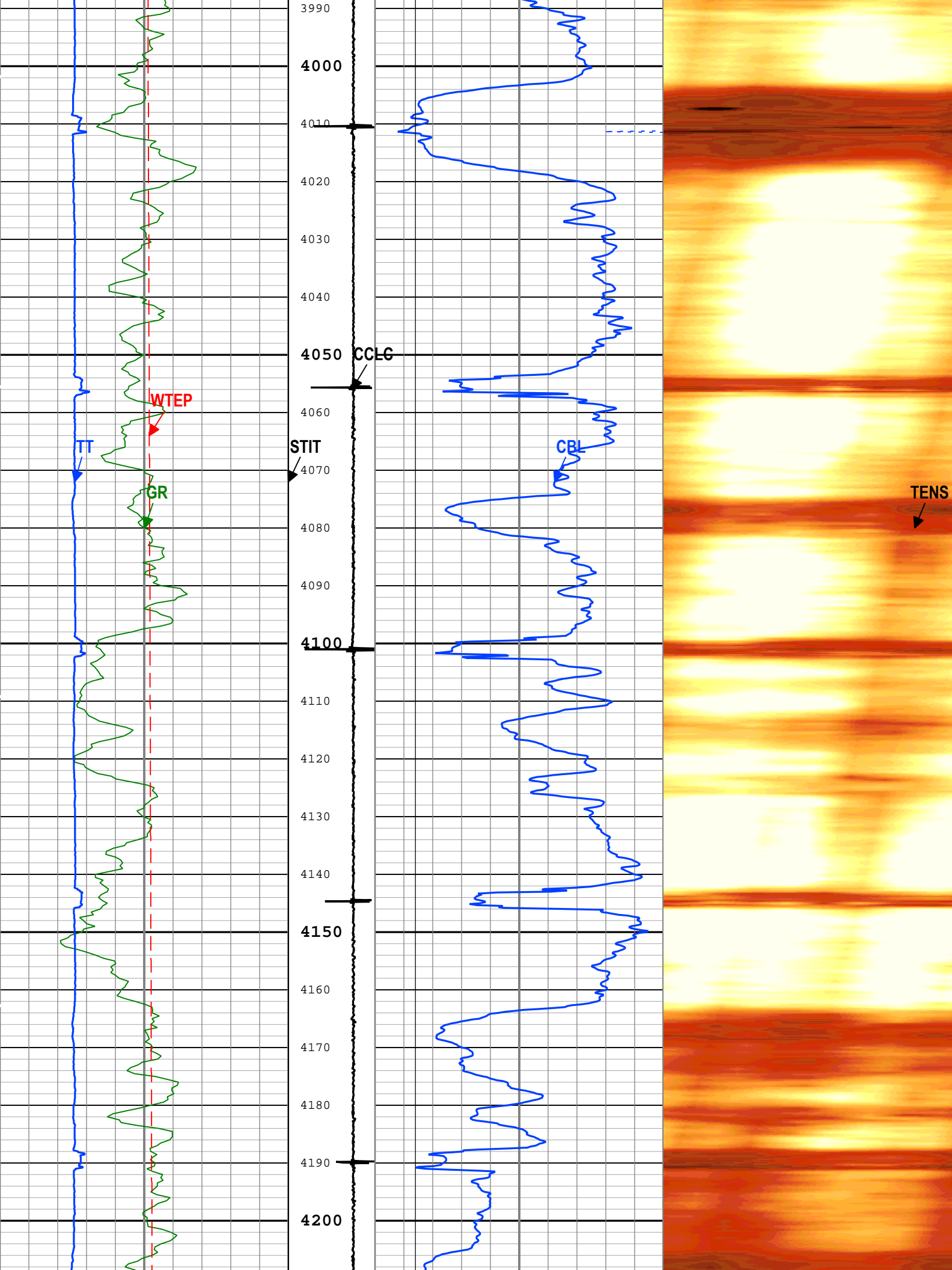


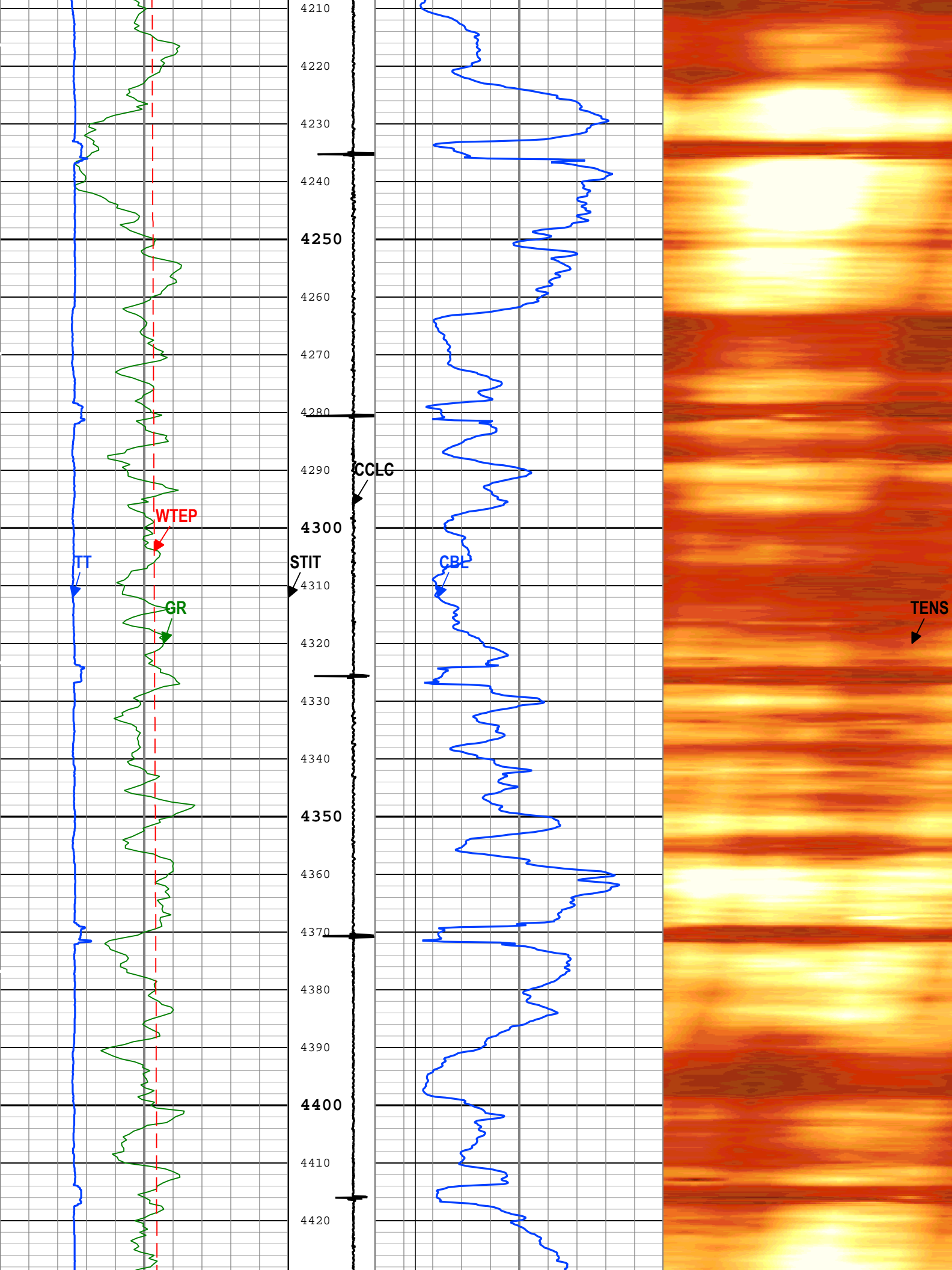


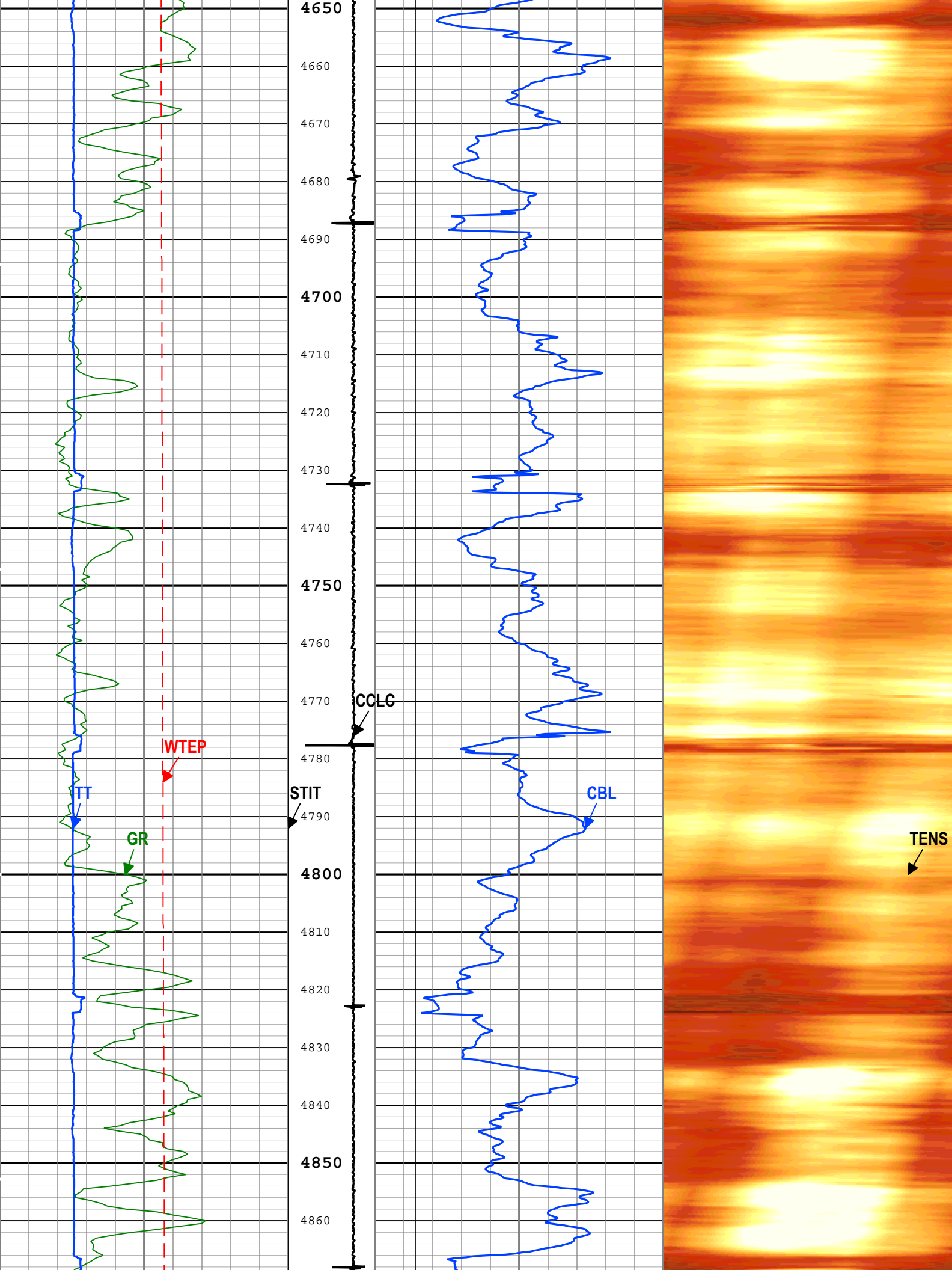


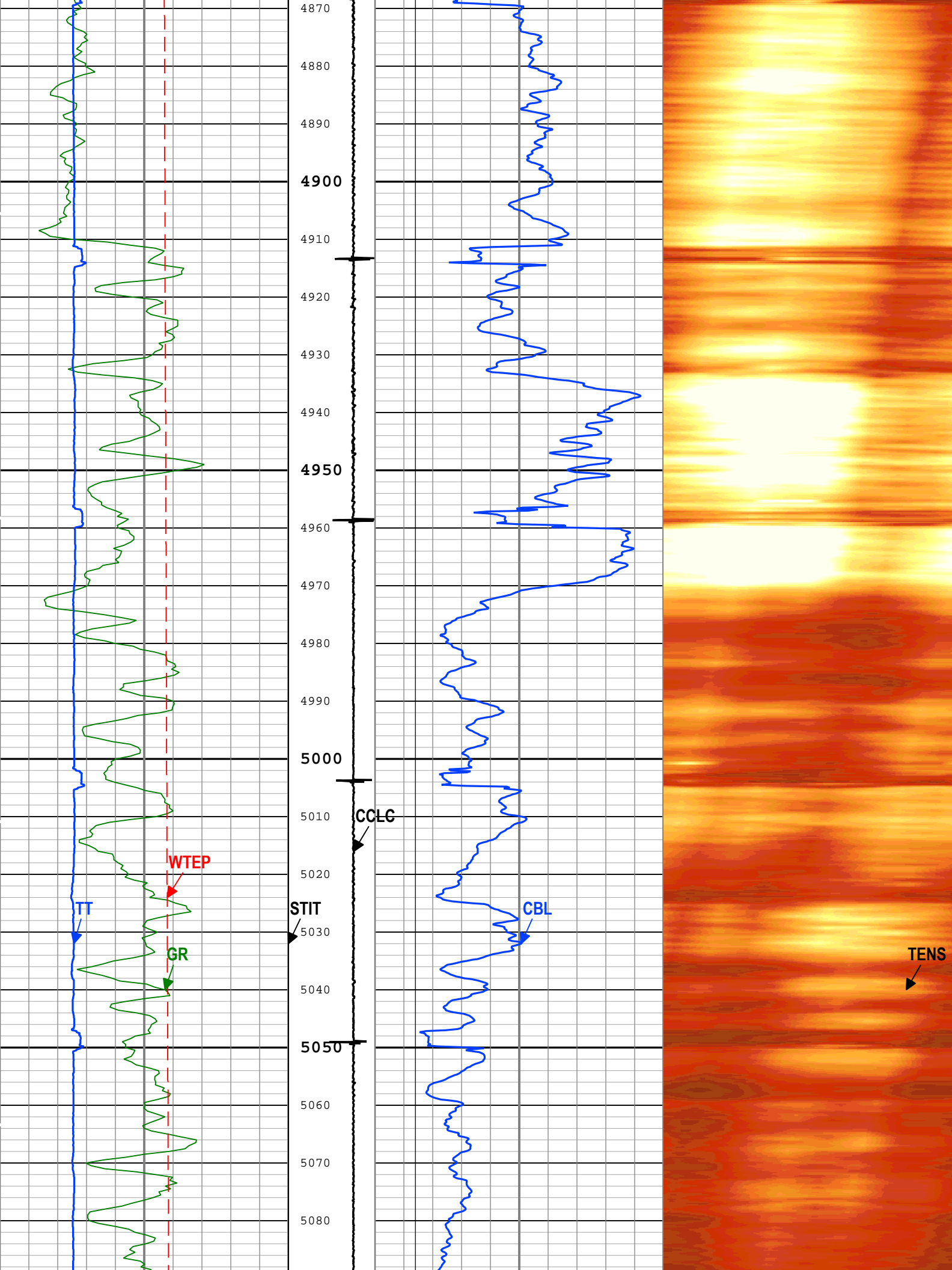


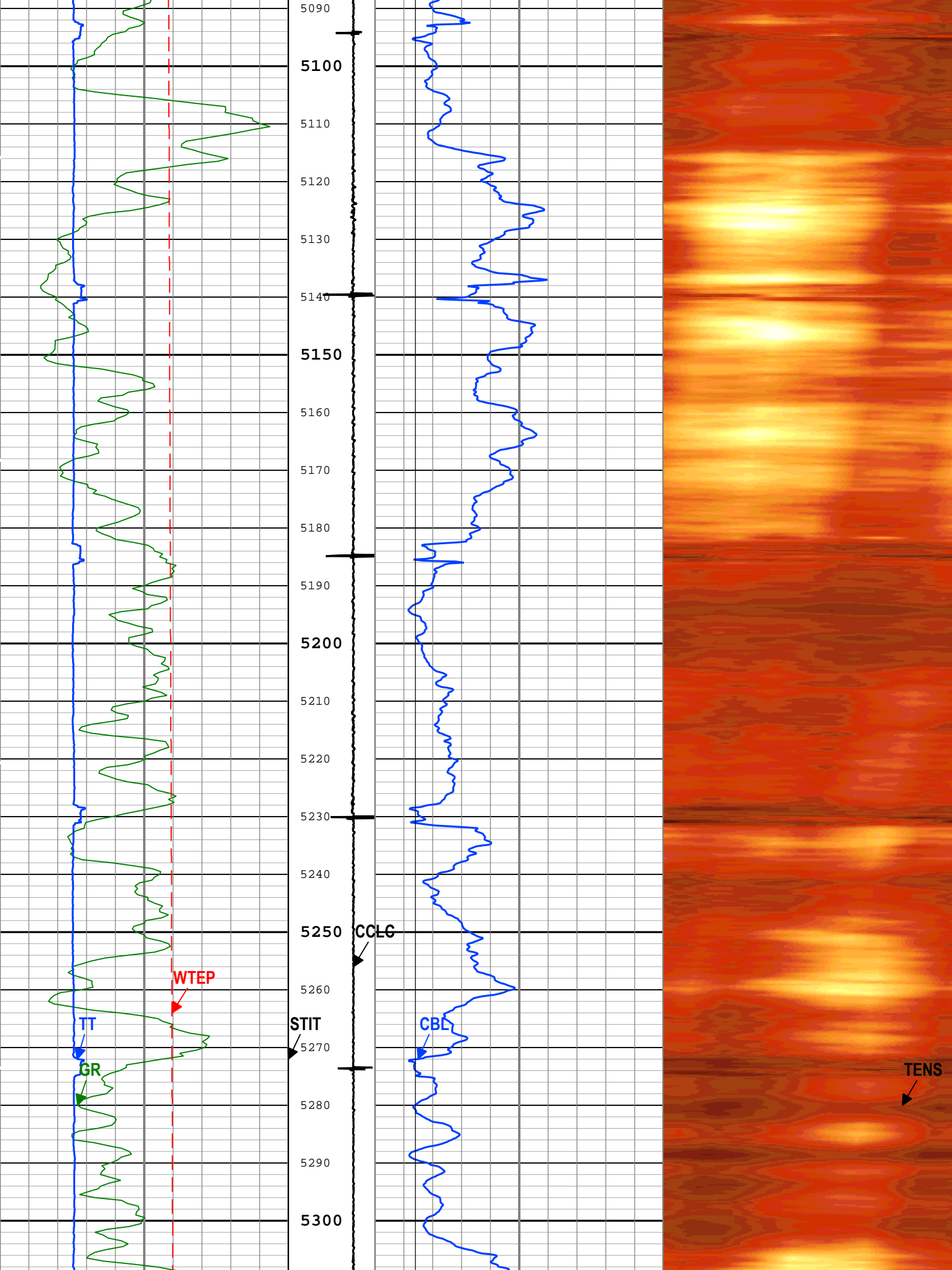


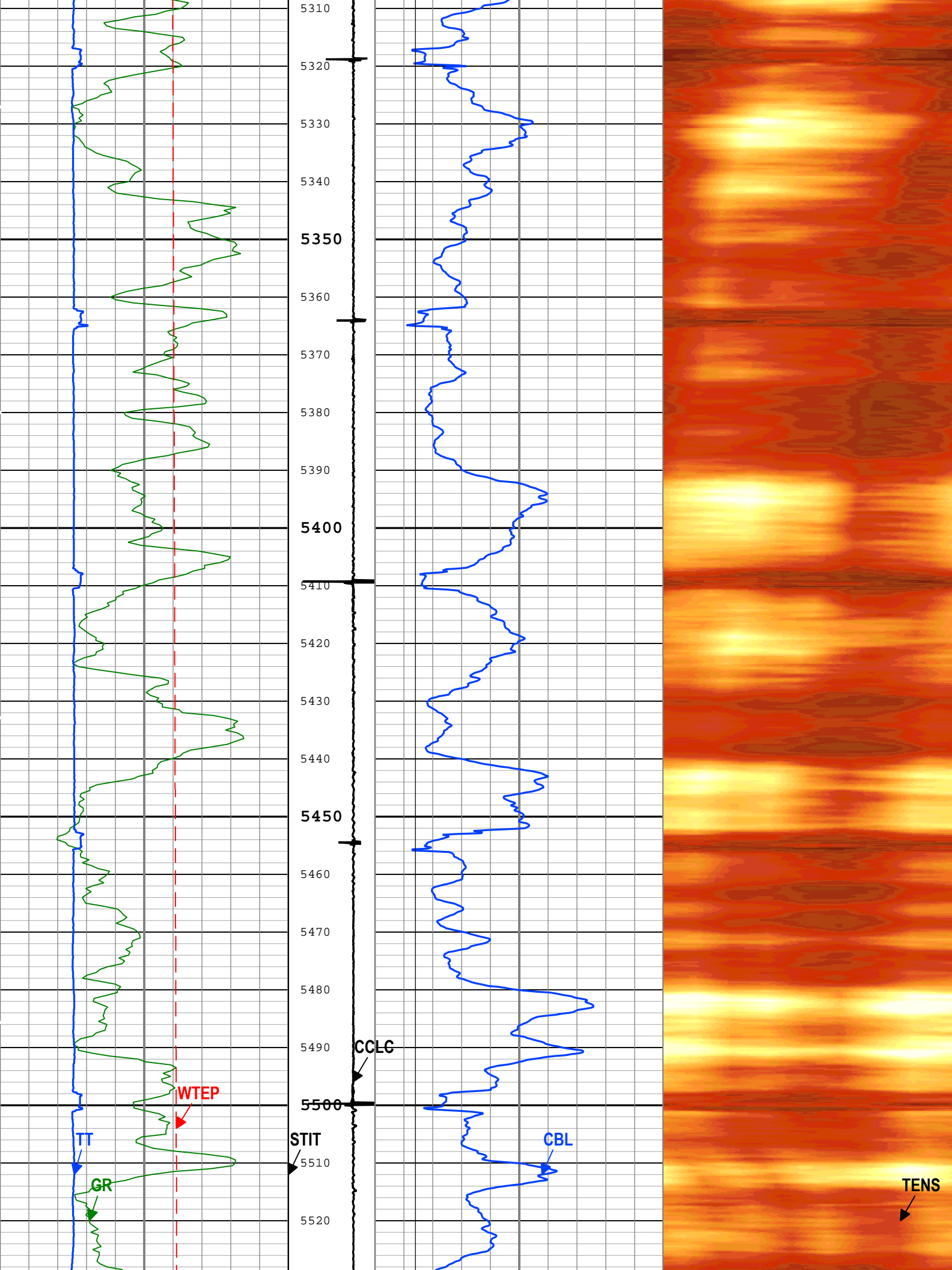


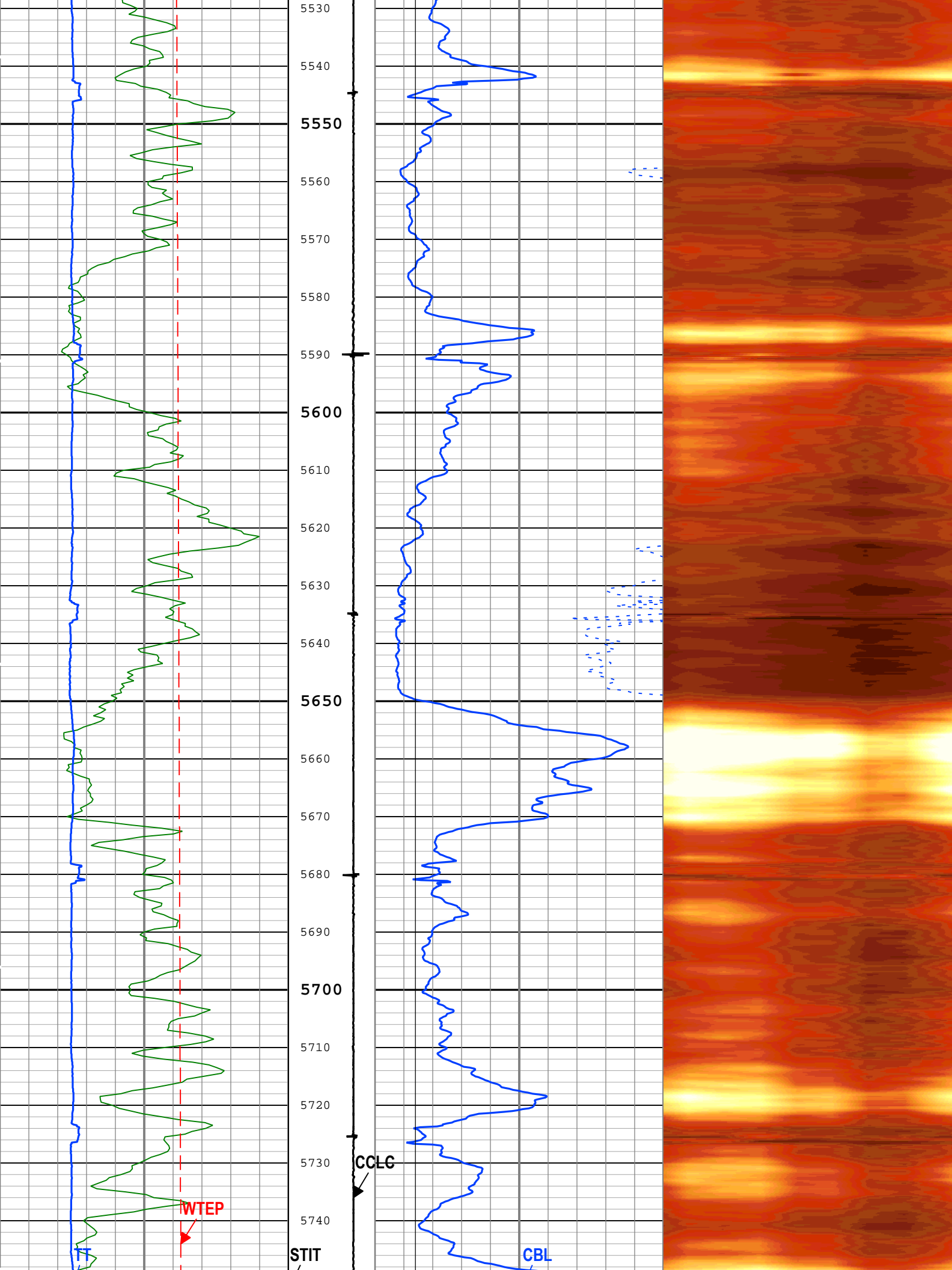


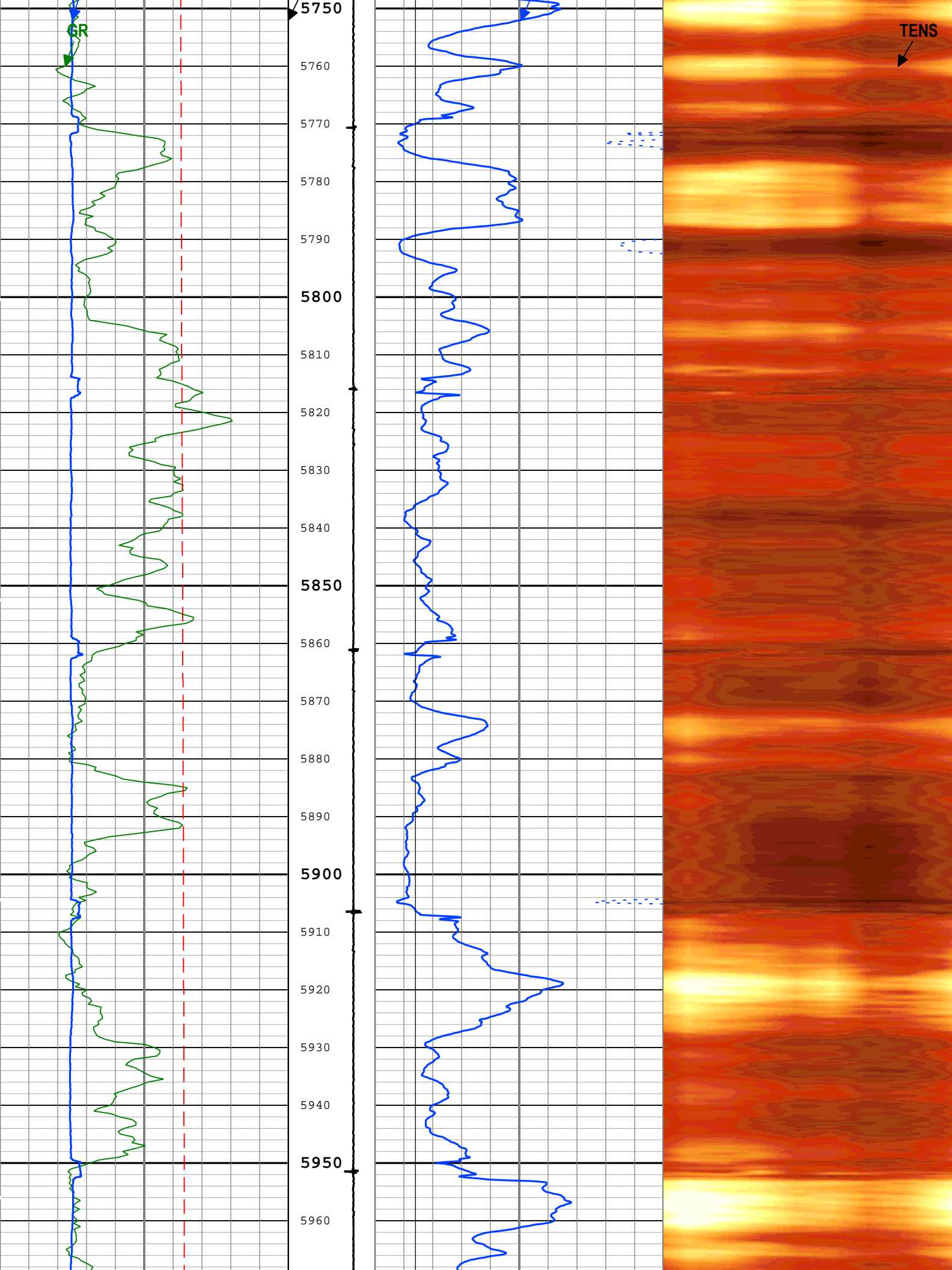


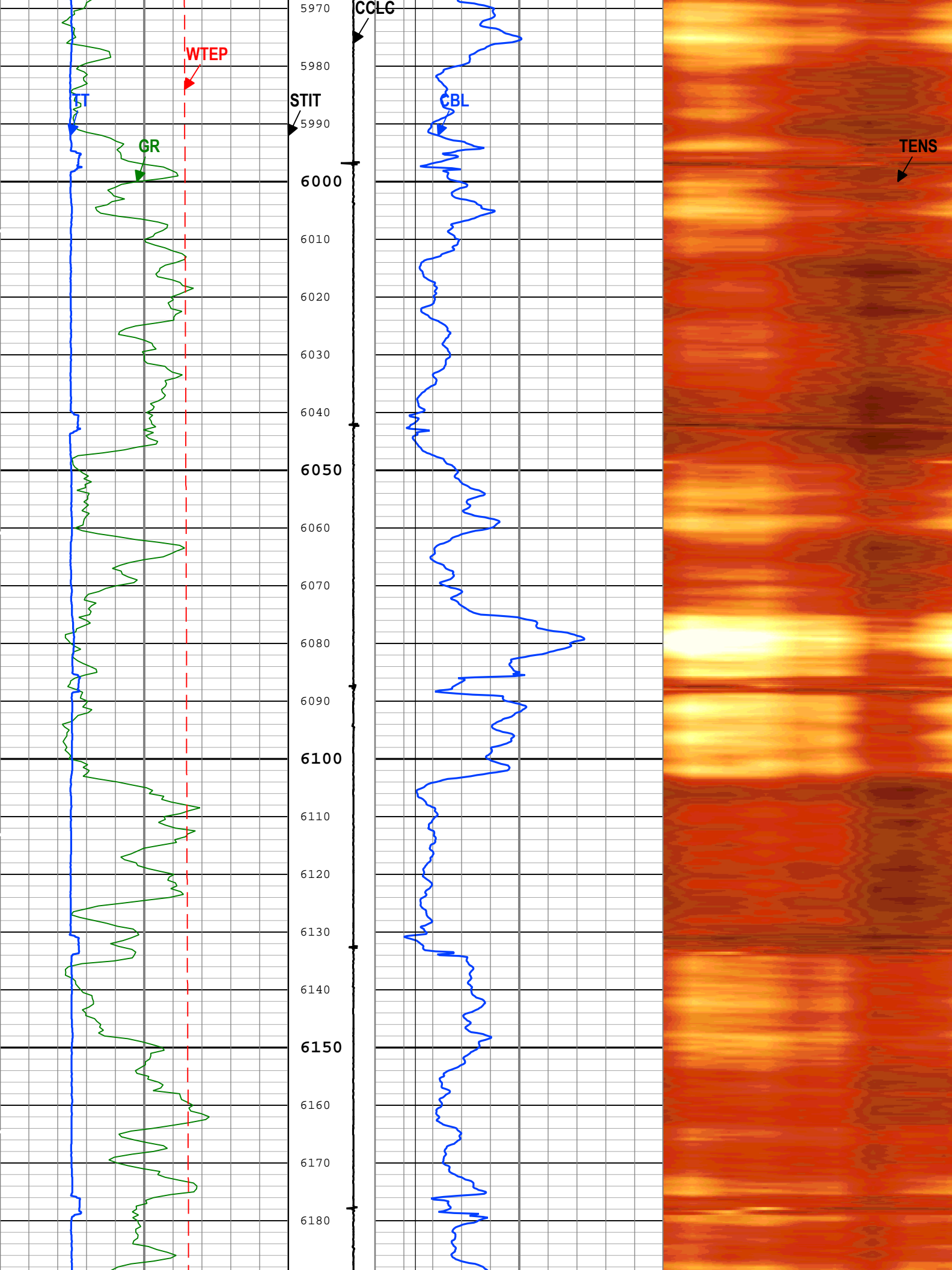


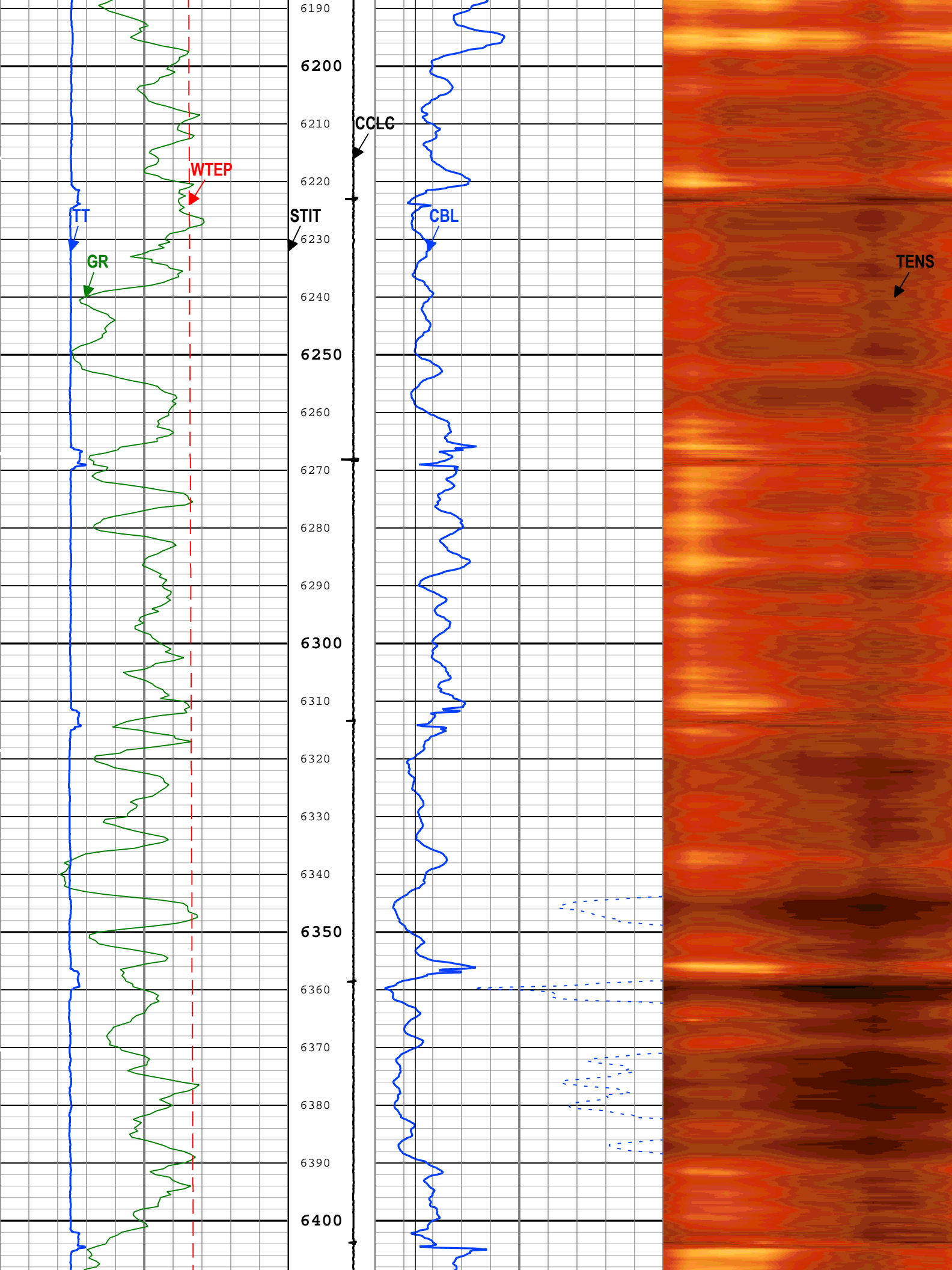


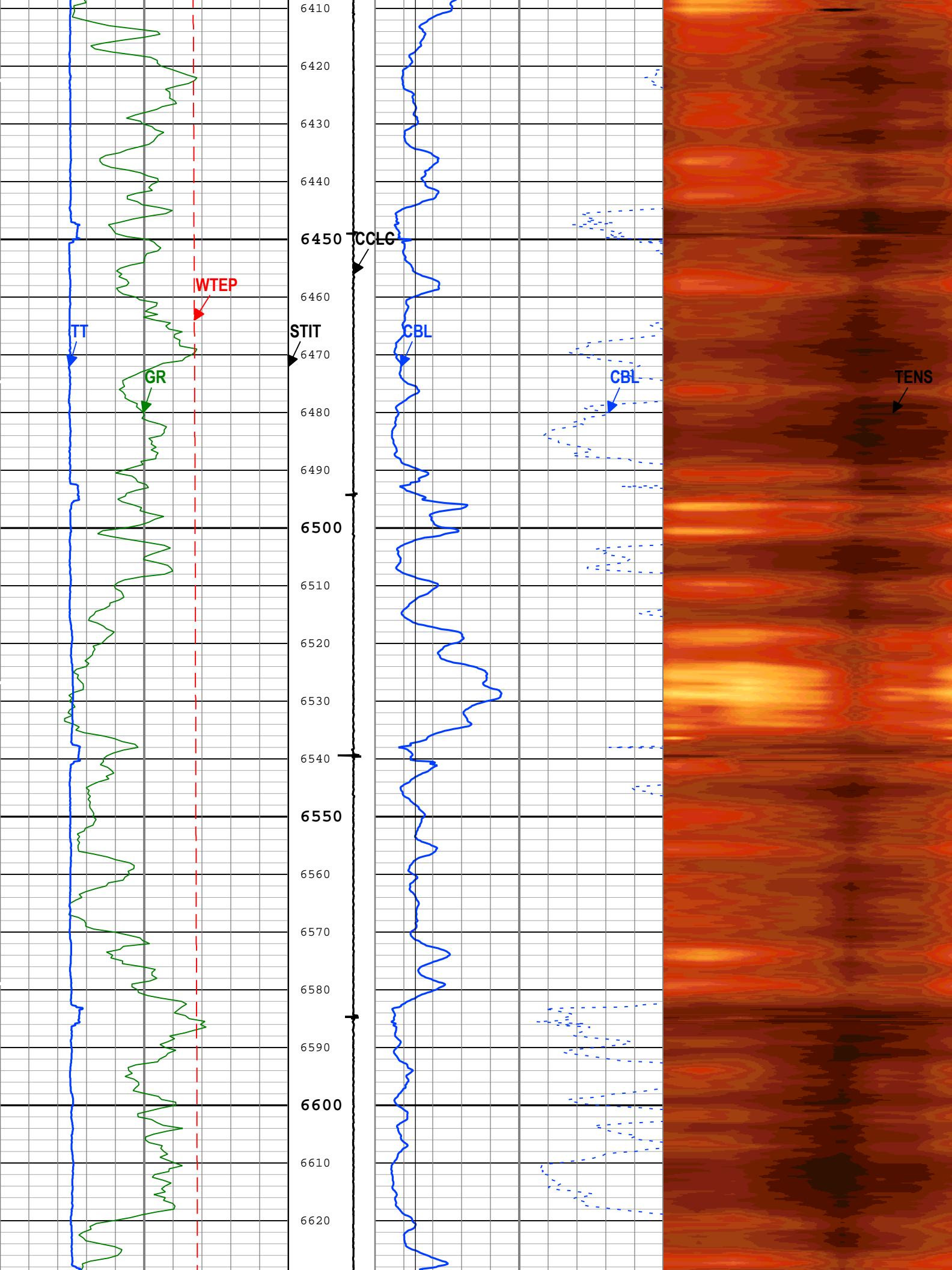


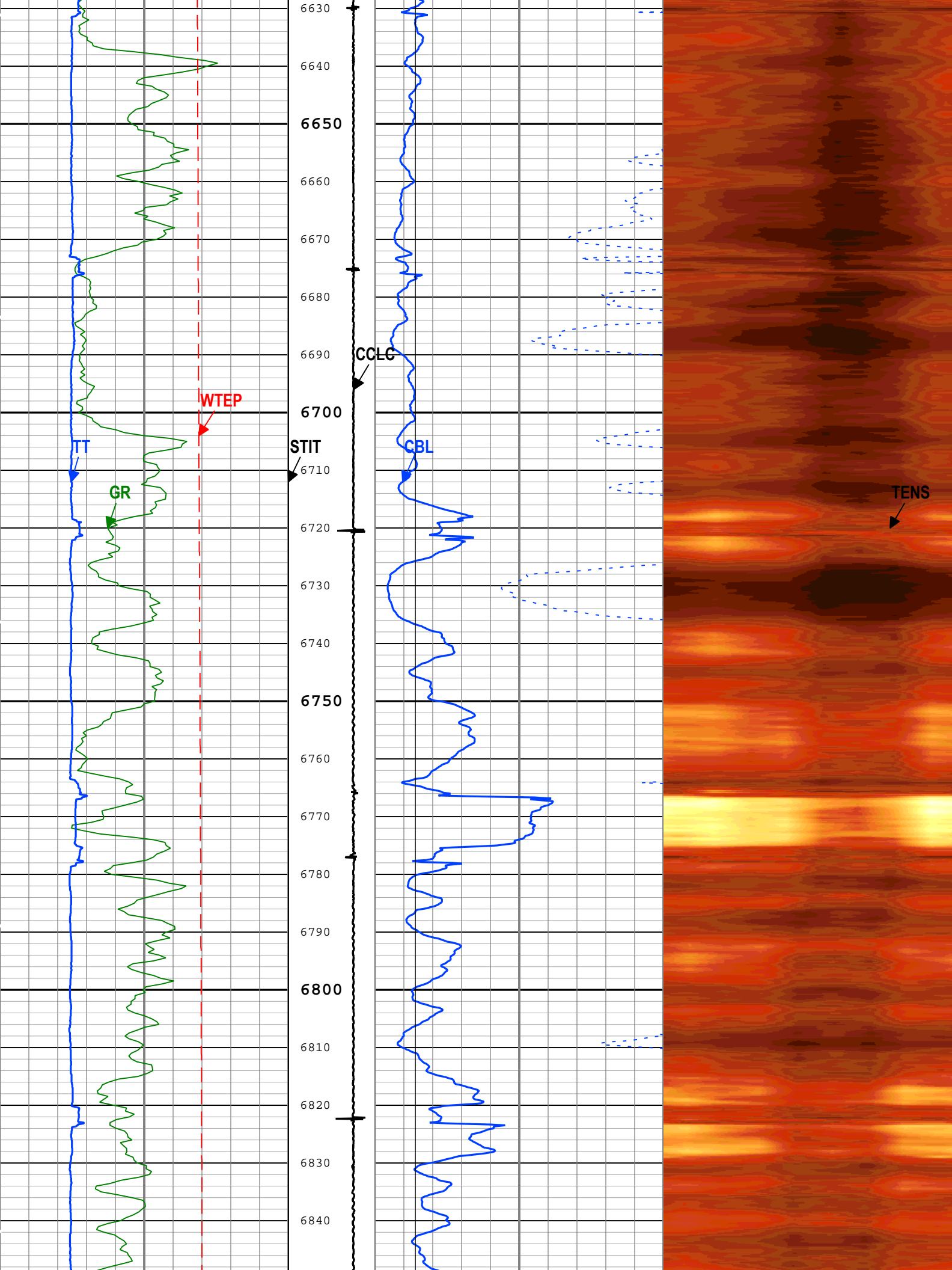


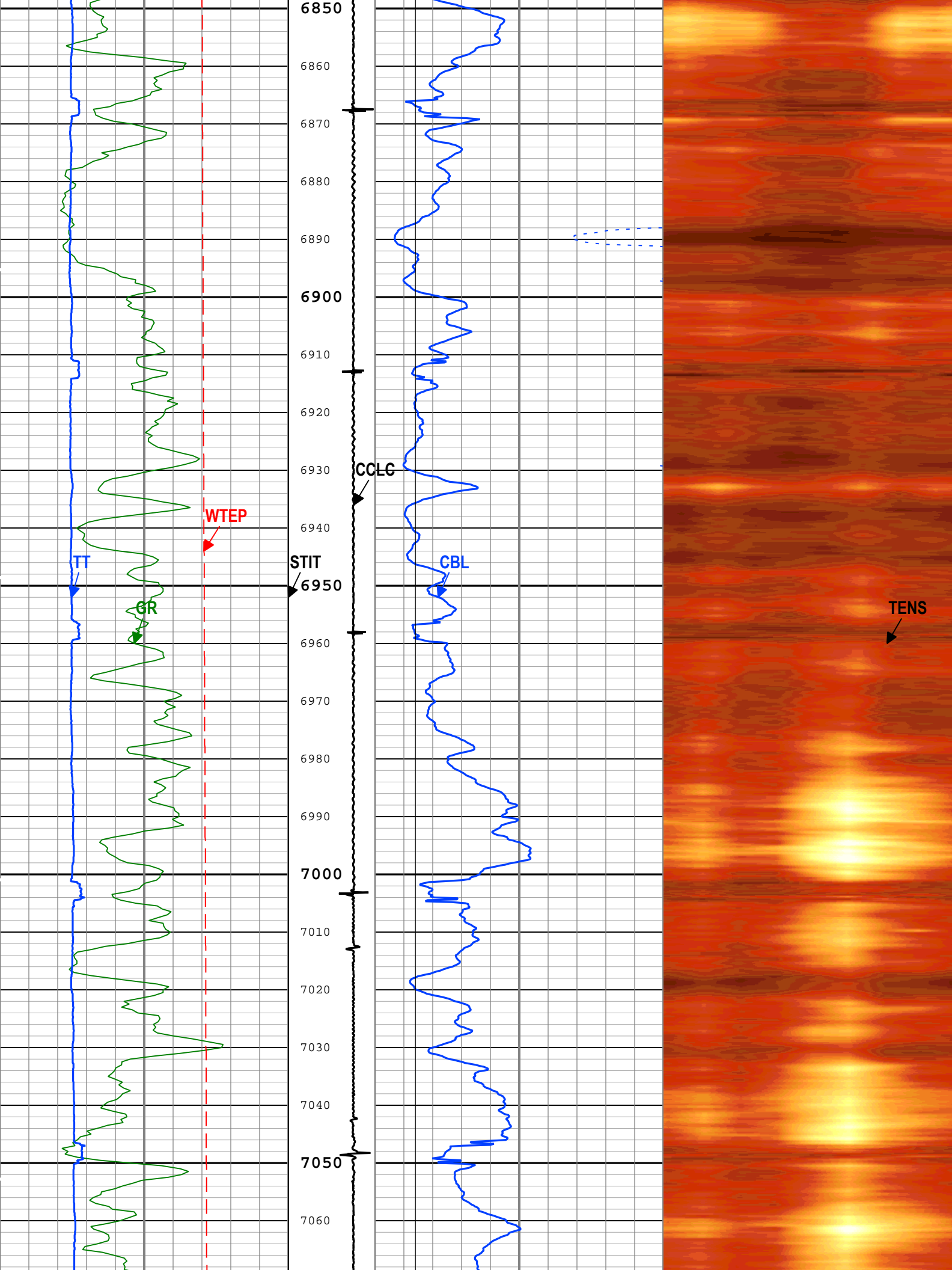


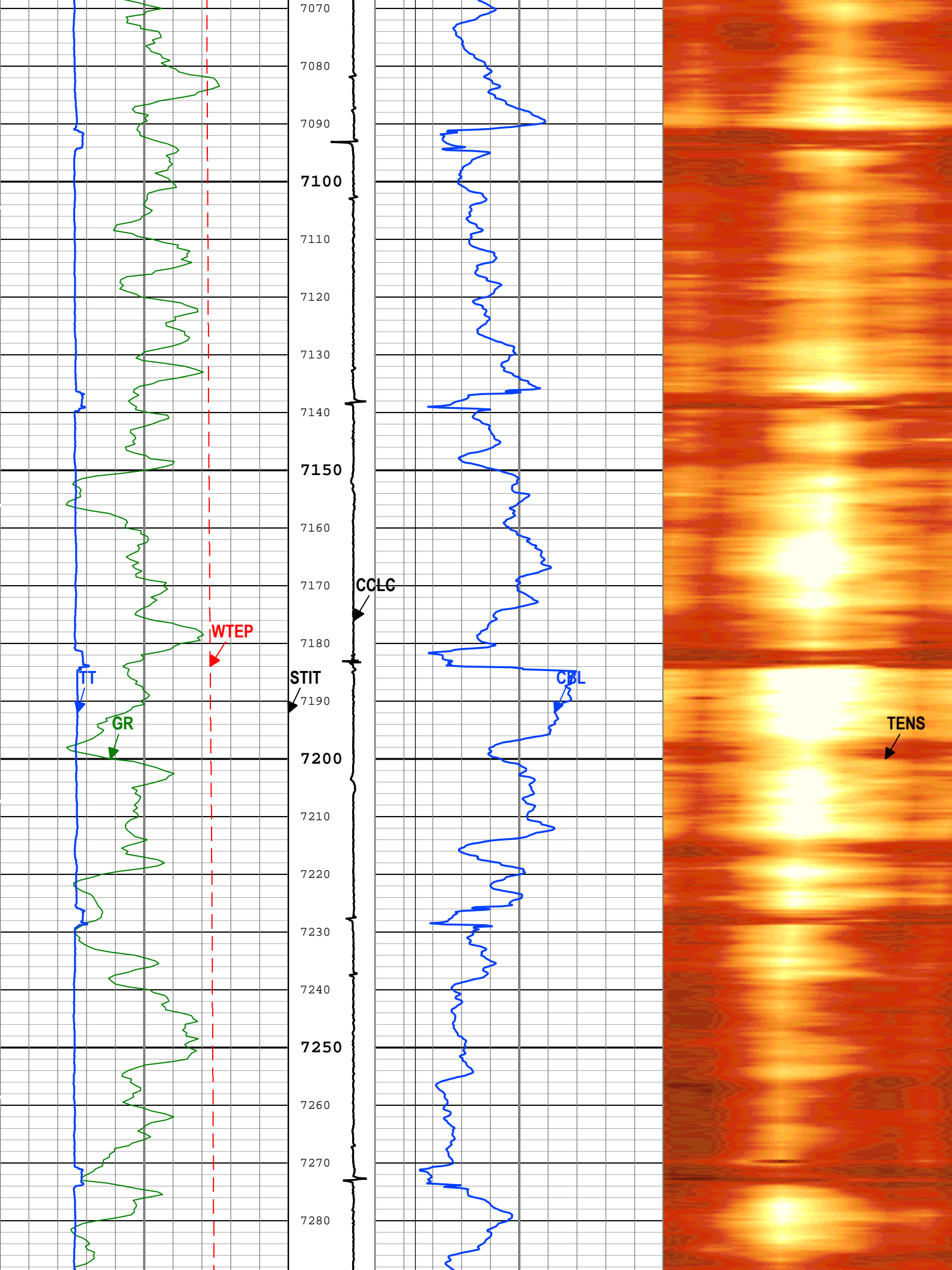


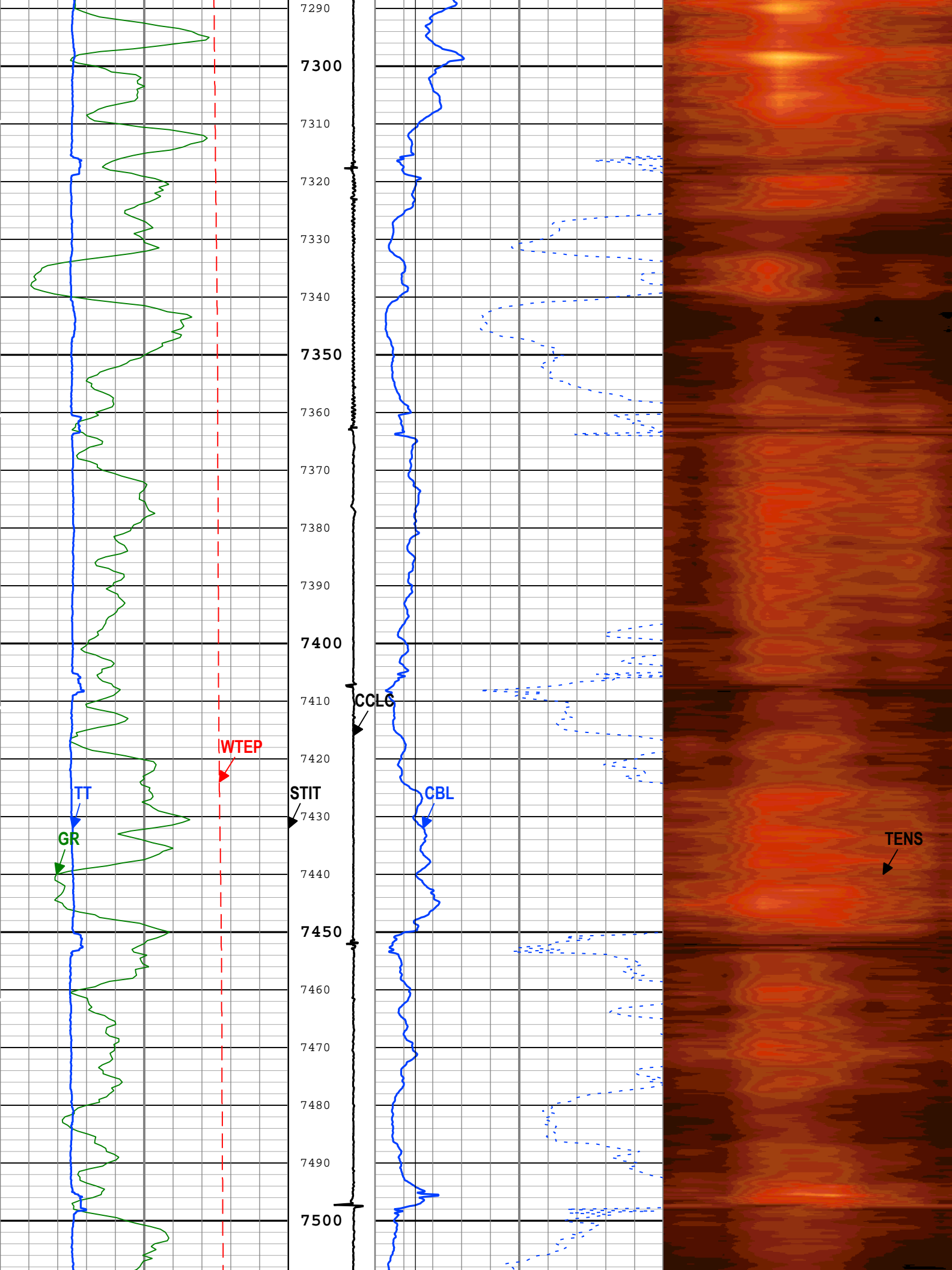


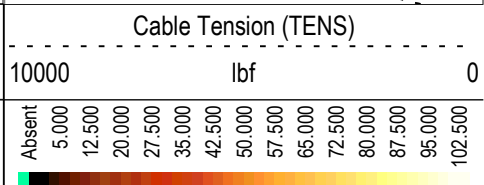
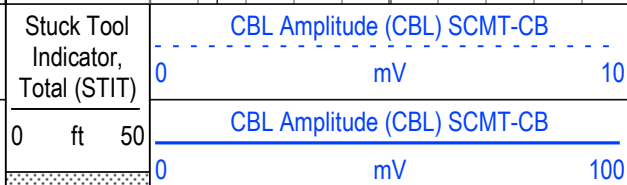
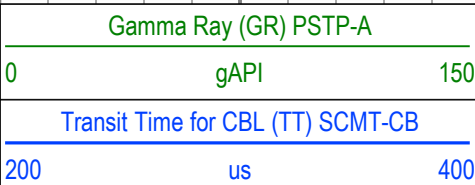
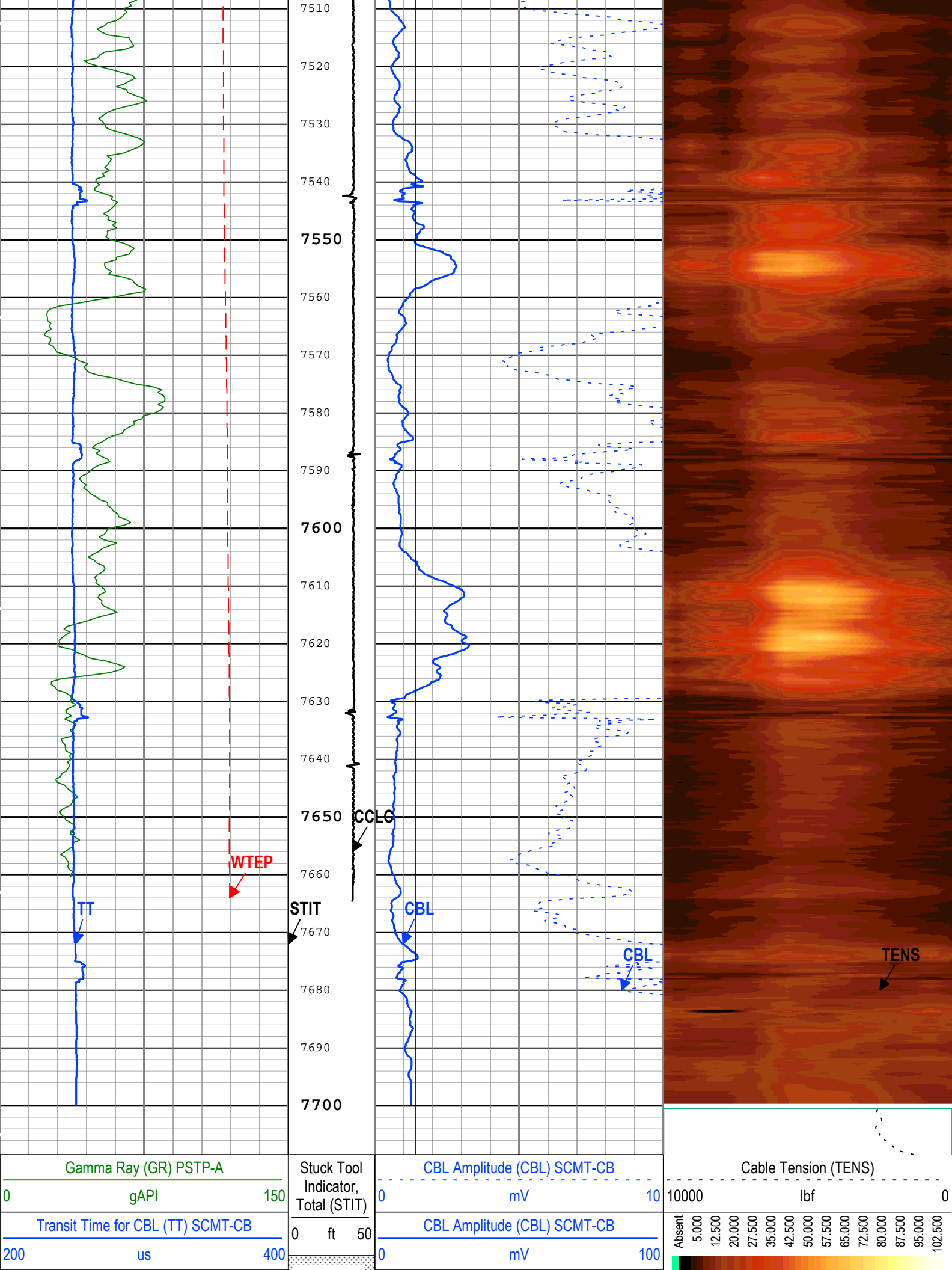


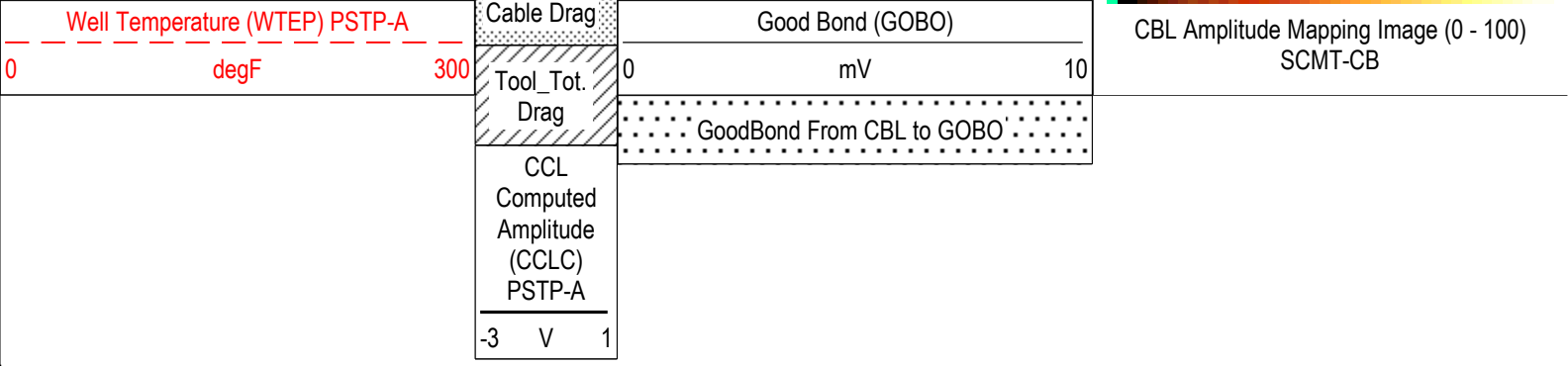












TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT Amplitudes and MAP Image Format: Log (SCMT_Amp_Image_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
 Depth Creation Date: 23-Jul-2017 04:54:31

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	10	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	5583	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	SCMT-CB	173.41	us
MMSA	MAP Minimum Sonic Amplitude	SCMT-CB	3.95	mV
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

ONE

Repeat

Software Version

Acquisition System	Version
Maxwell 2017 SP2	7.2.87778.3100

Pass Summary

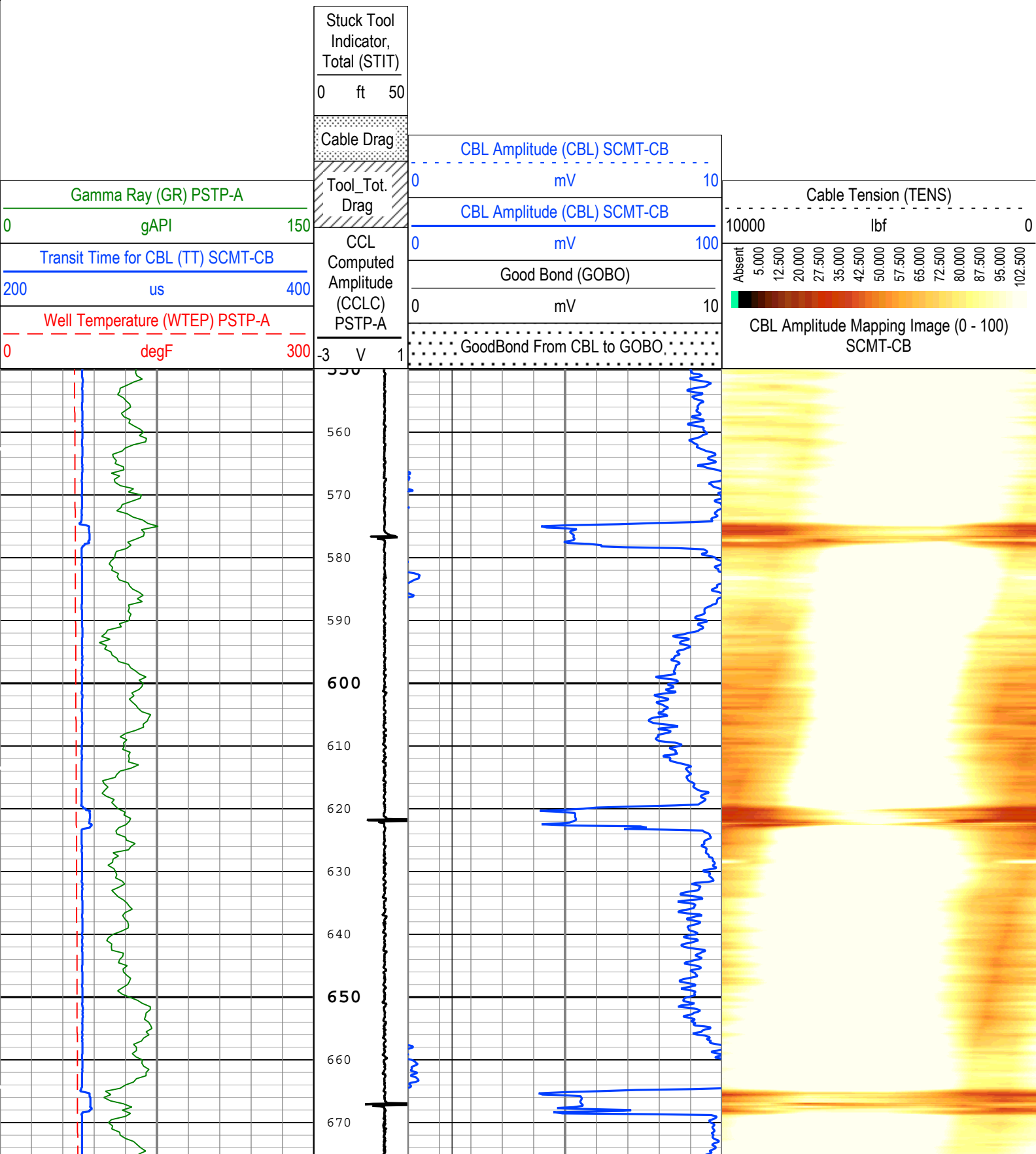
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include
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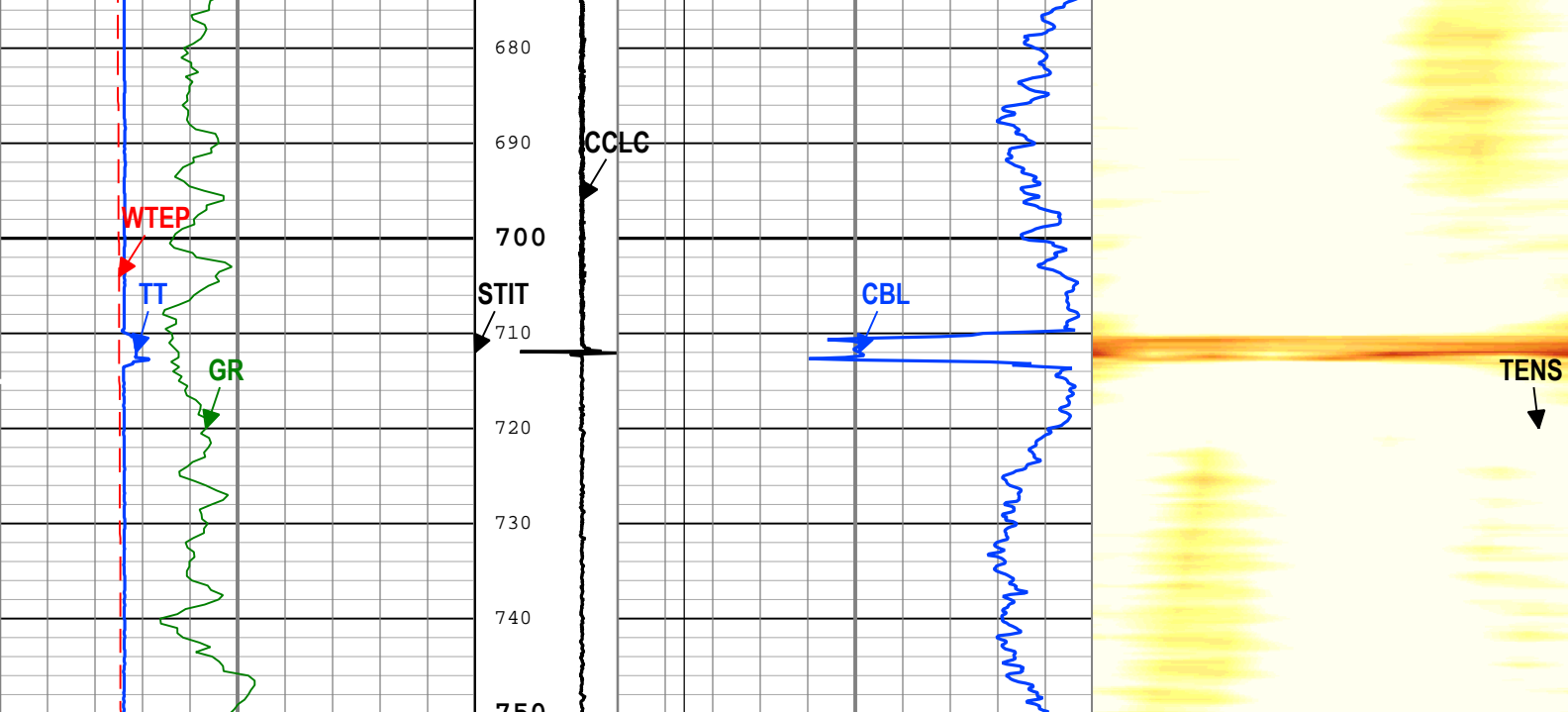
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Limit	Include Parallel Data
ONE	Log[4]:Up	Up	529.96 ft	811.56 ft	23-Jul-2017 4:30:58 AM	23-Jul-2017 4:36:38 AM	ON	7.81 ft	Yes

All depths are referenced to toolstring zero

Description: SCMT Amplitudes and MAP Image Format: Log (SCMT_Amp_Image_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
 Depth Creation Date: 23-Jul-2017 04:54:39

TIME_1900 - Time Marked every 60.00 (s)





Gamma Ray (GR) PSTP-A 0 gAPI 150	Stuck Tool Indicator, Total (STIT) 0 ft 50	CBL Amplitude (CBL) SCMT-CB 0 mV 10	Cable Tension (TENS) 10000 lbf 0
Transit Time for CBL (TT) SCMT-CB 200 us 400	Cable Drag	CBL Amplitude (CBL) SCMT-CB 0 mV 100	
Well Temperature (WTEP) PSTP-A 0 degF 300	Tool_Tot. Drag	Good Bond (GOBO) 0 mV 10	
	CCL Computed Amplitude (CCLC) PSTP-A -3 V 1	GoodBond From CBL to GOBO	

TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT Amplitudes and MAP Image Format: Log (SCMT_Amp_Image_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
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ONE: Parameters

Parameter	Description	Tool	Value	Unit
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DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
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DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
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EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	5583	ft
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GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	

MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	SCMT-CB	173.41	us
MMSA	MAP Minimum Sonic Amplitude	SCMT-CB	3.95	mV
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

ONE

Main

Software Version

Acquisition System	Version
Maxwell 2017 SP2	7.2.87778.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	482.76 ft	7708.53 ft	23-Jul-2017 2:11:36 AM	23-Jul-2017 4:28:44 AM	ON	7.91 ft	Yes

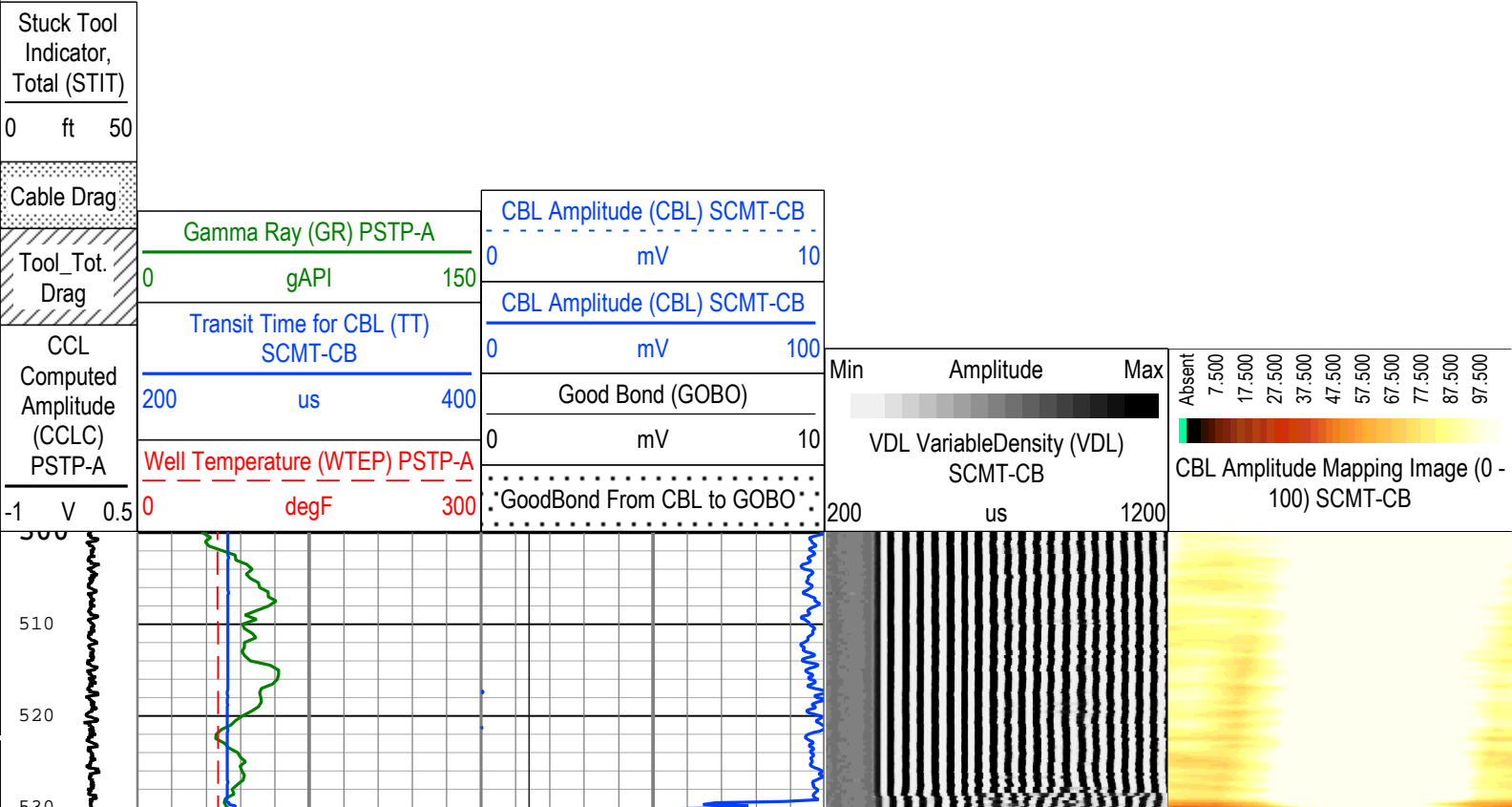
All depths are referenced to toolstring zero

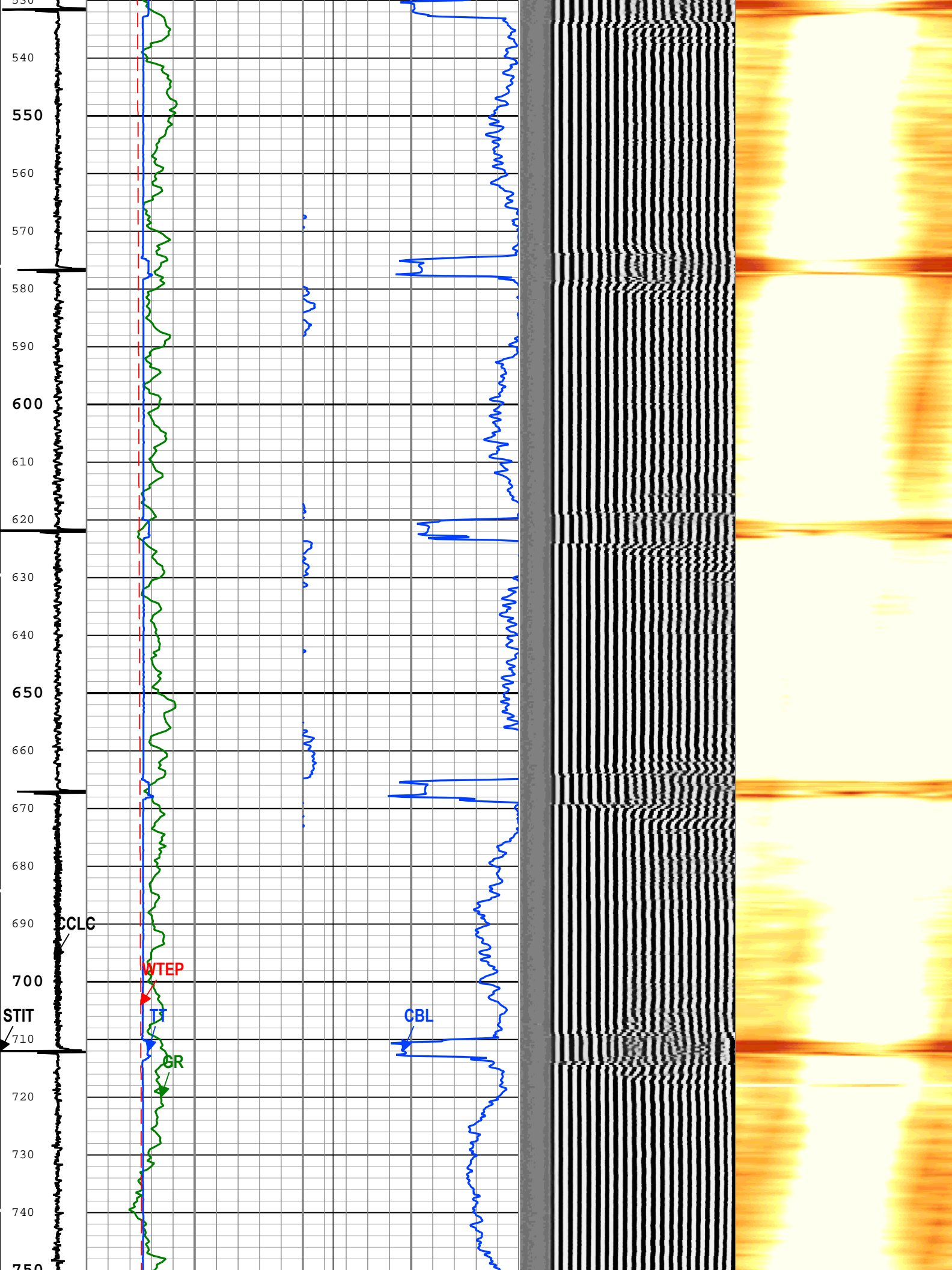
Log

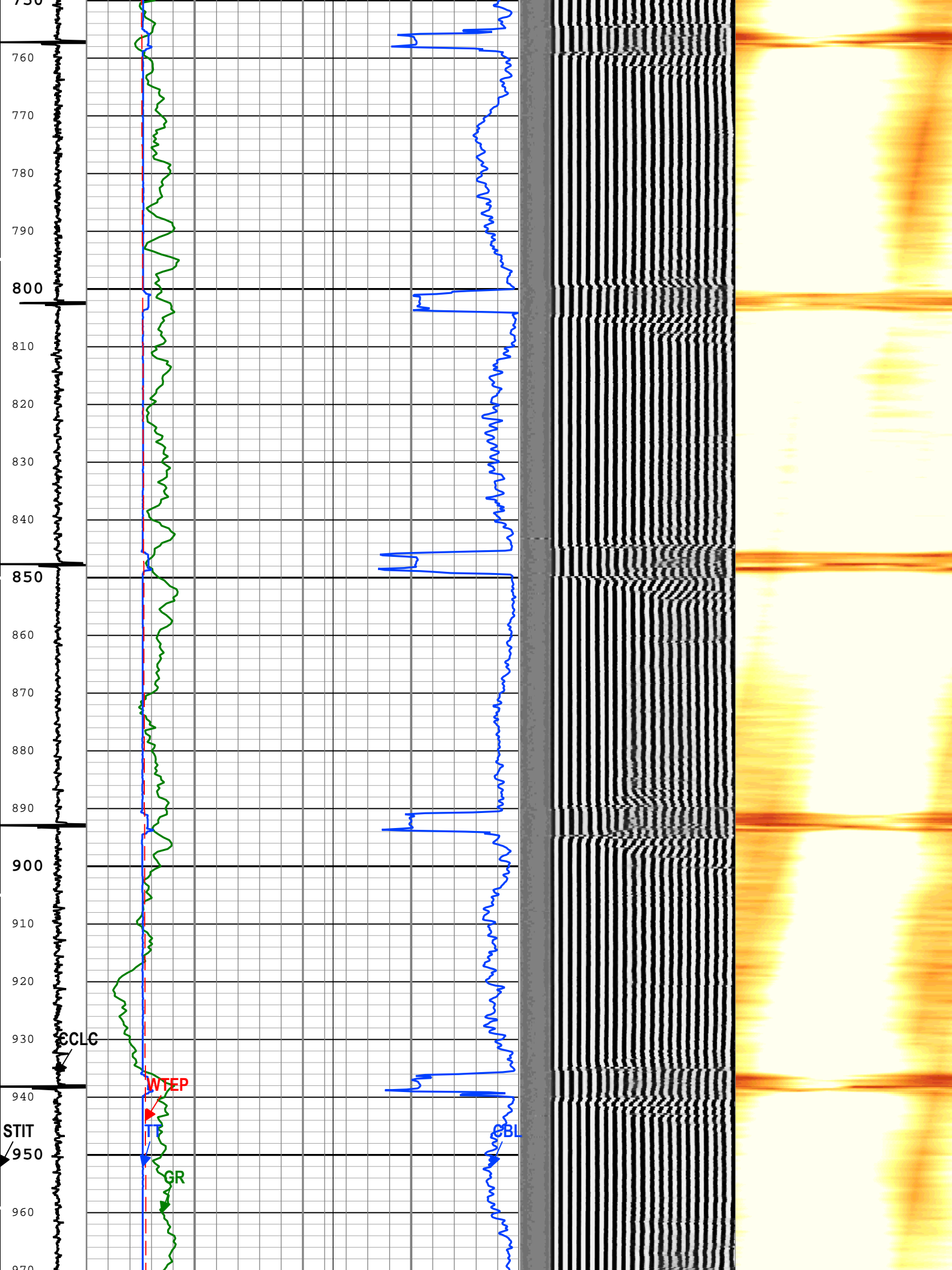
Company: CAERUS OPERATING LLC Well: Chevron 12A-17
ONE: Log[3]:Up:S002

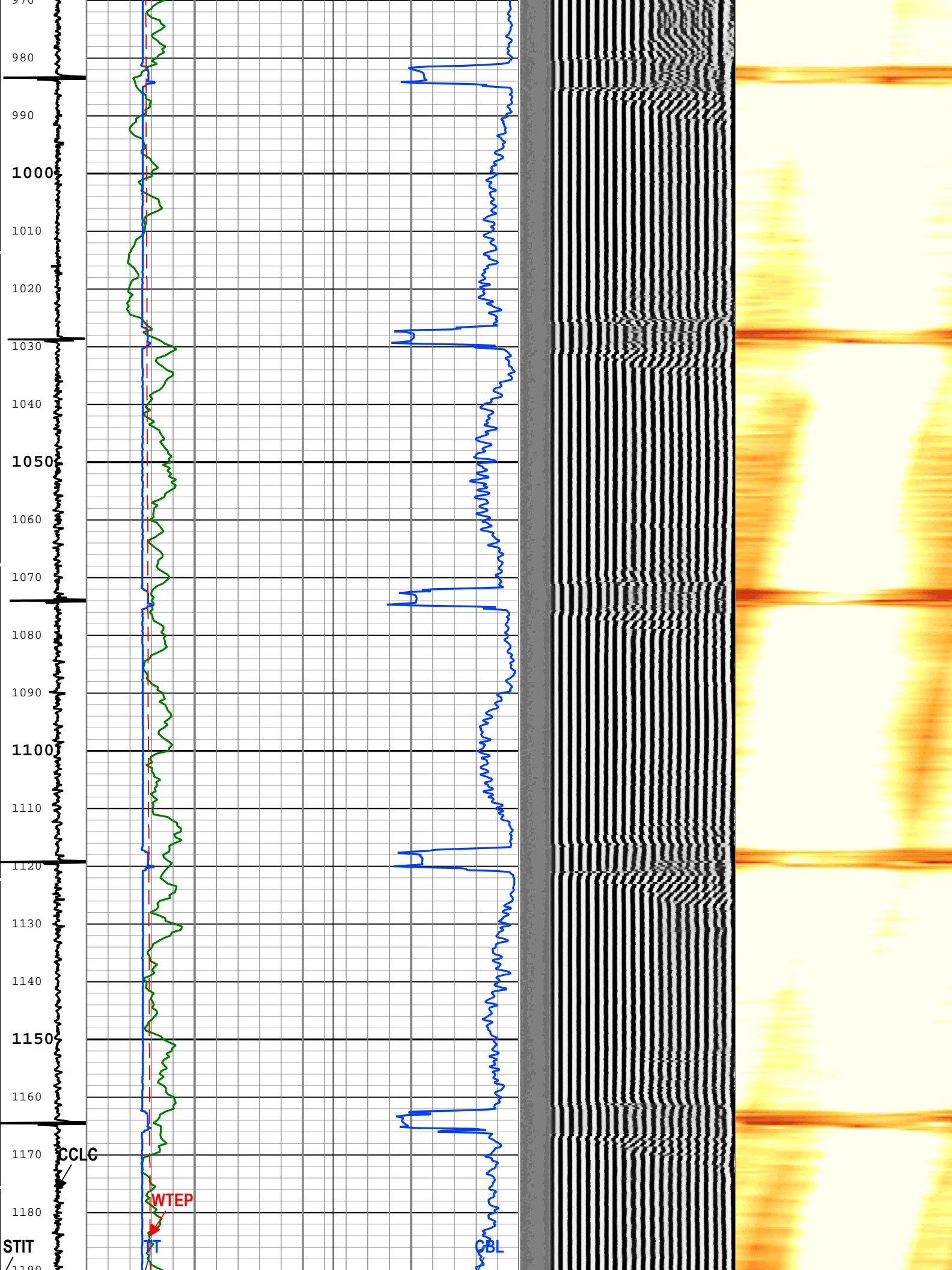
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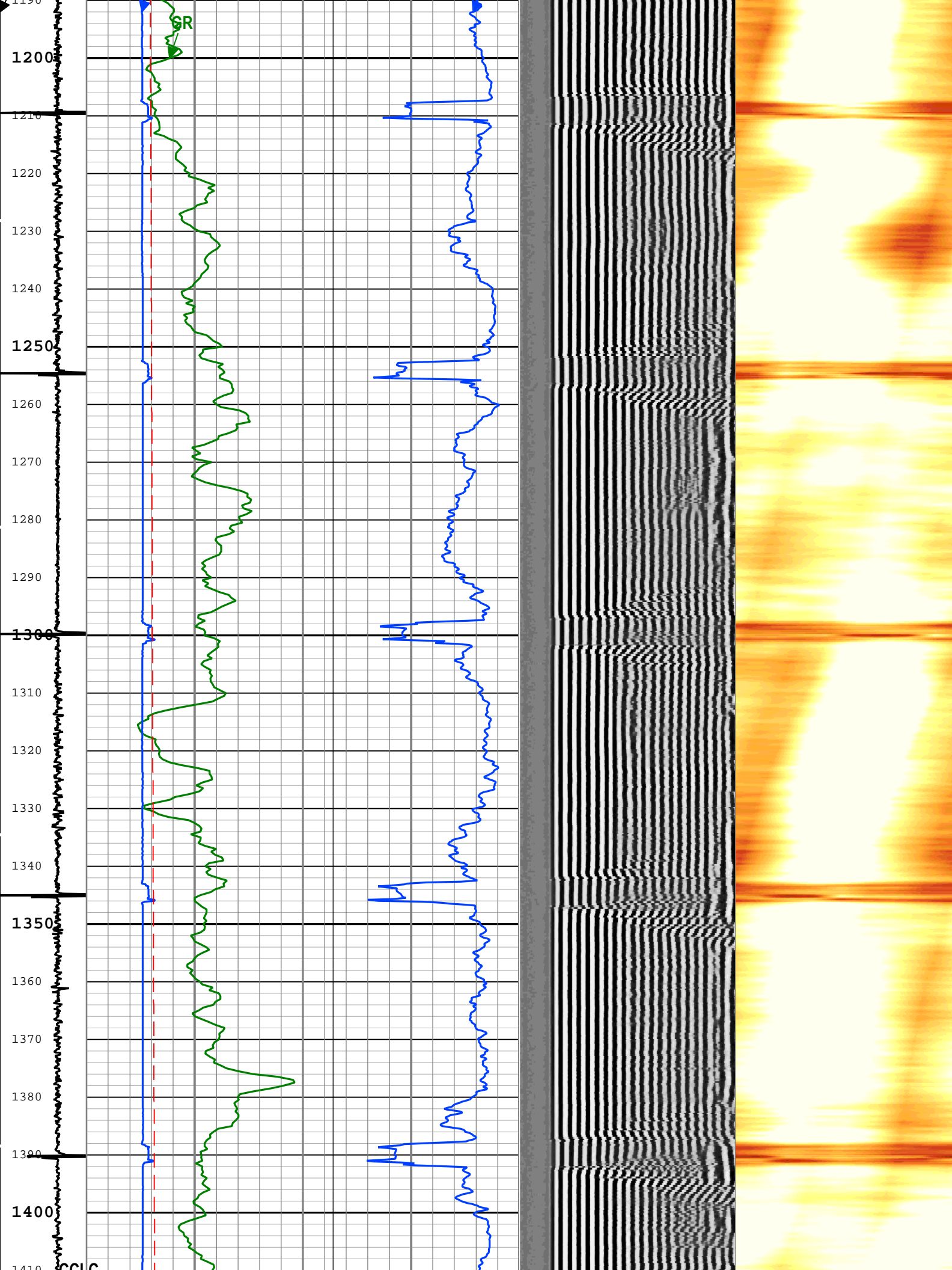
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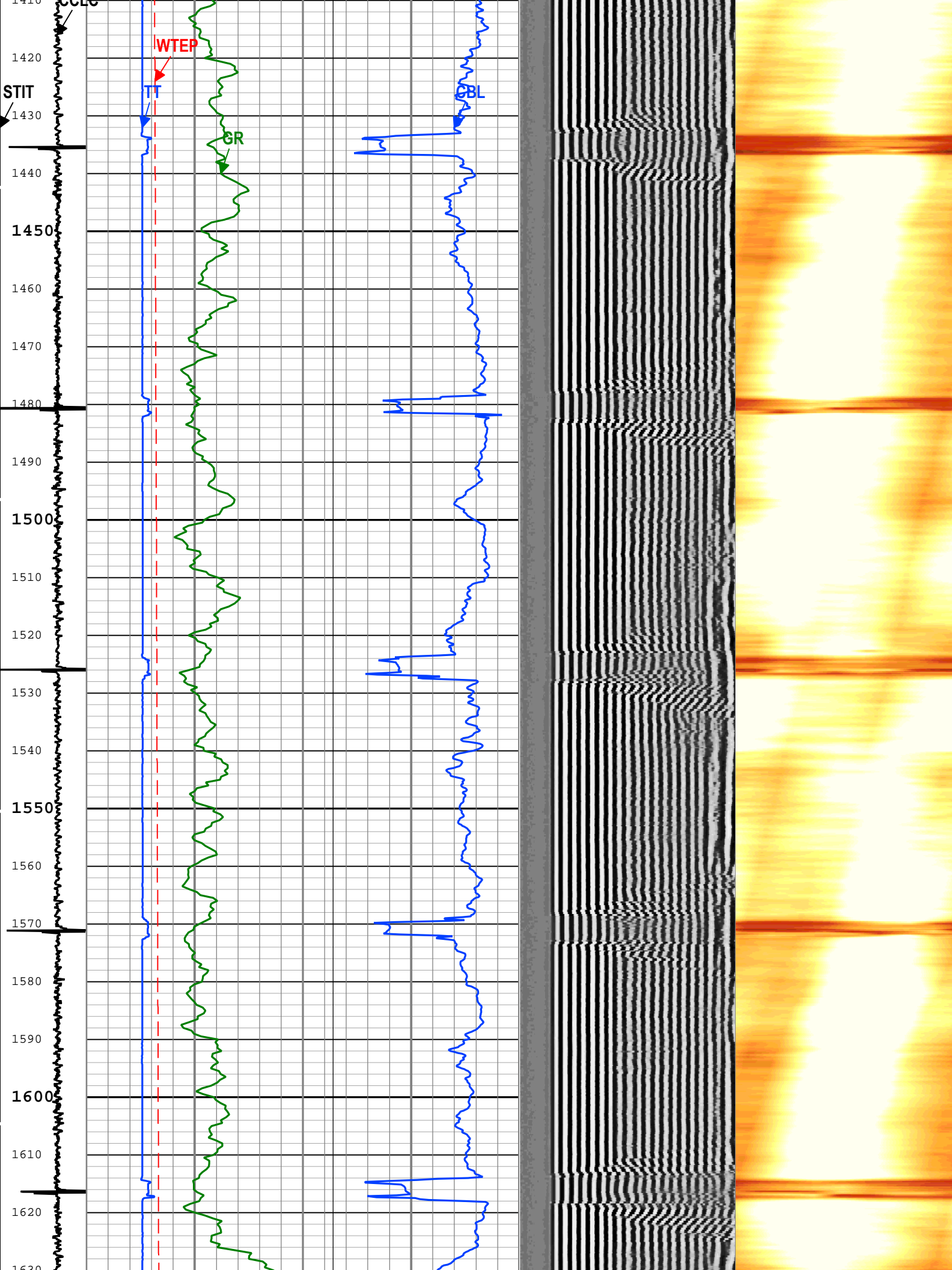


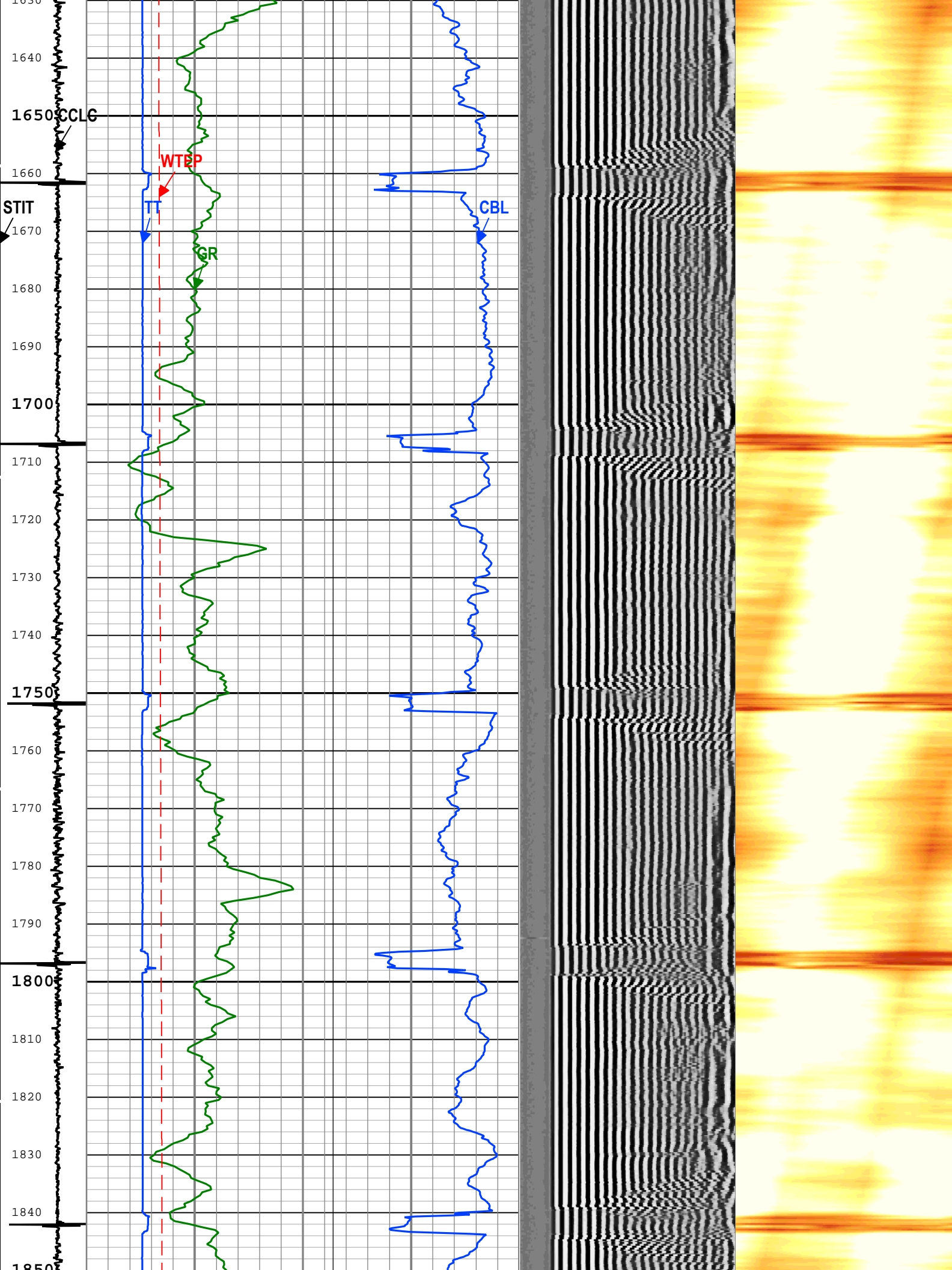


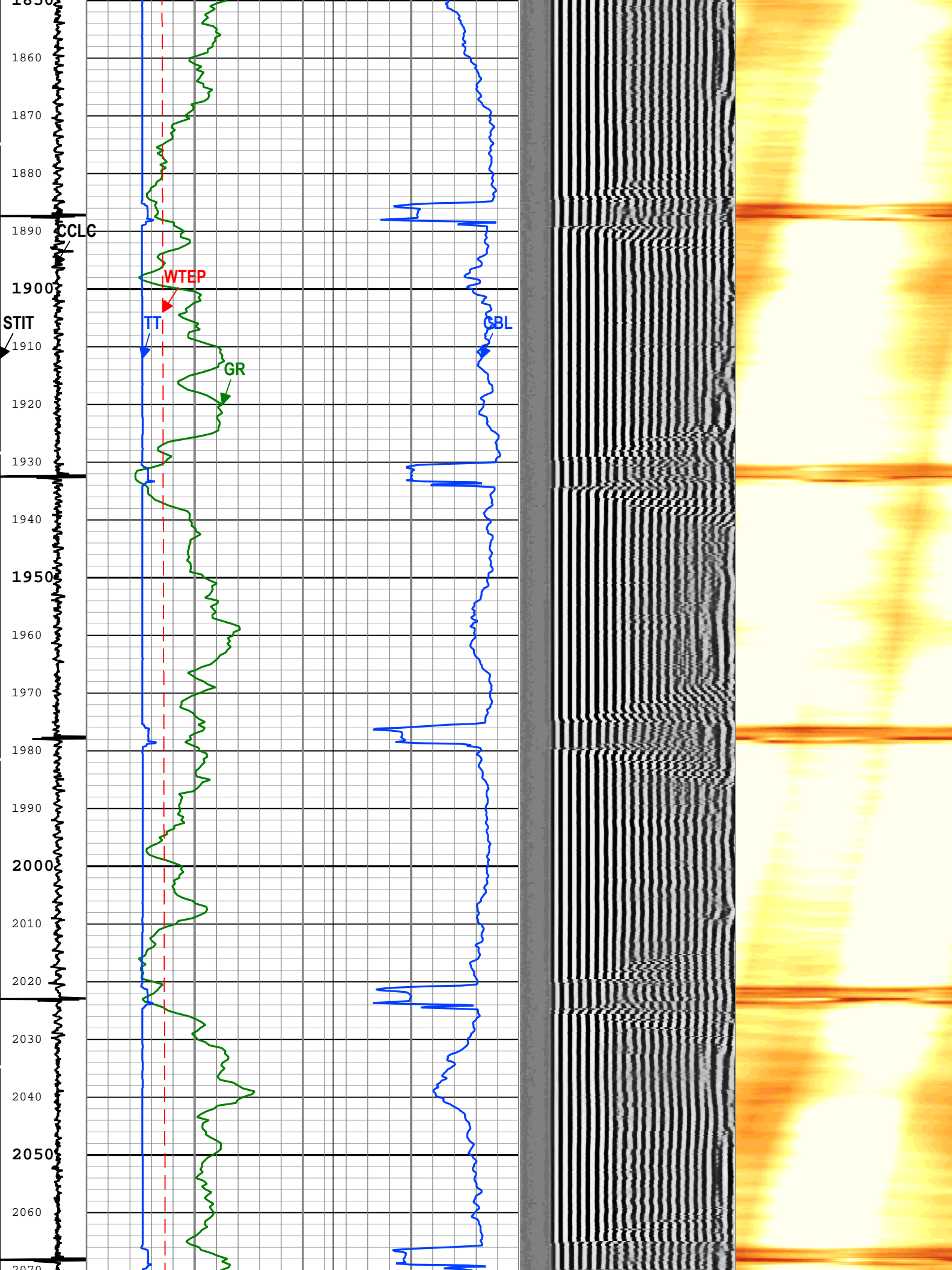


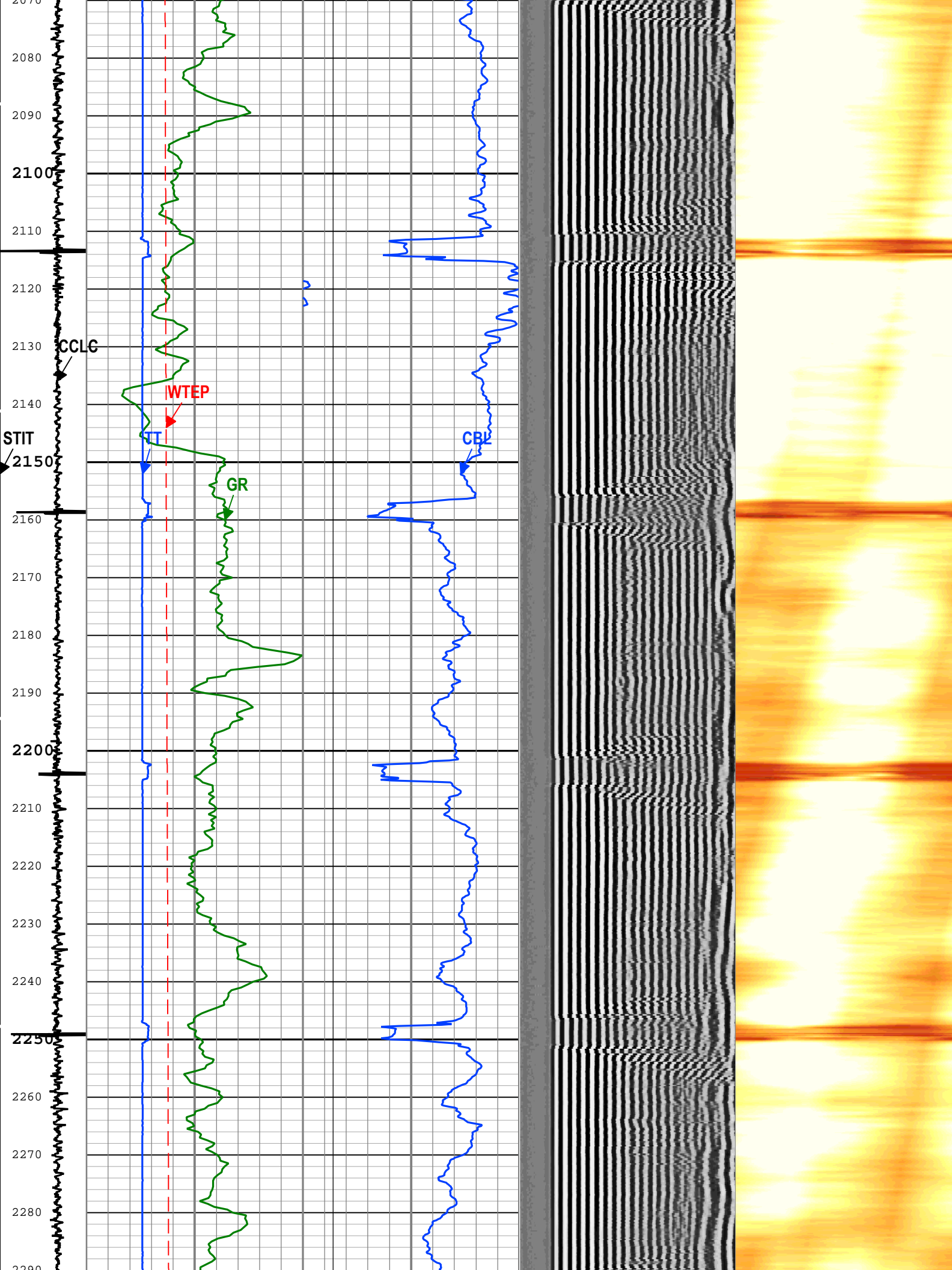


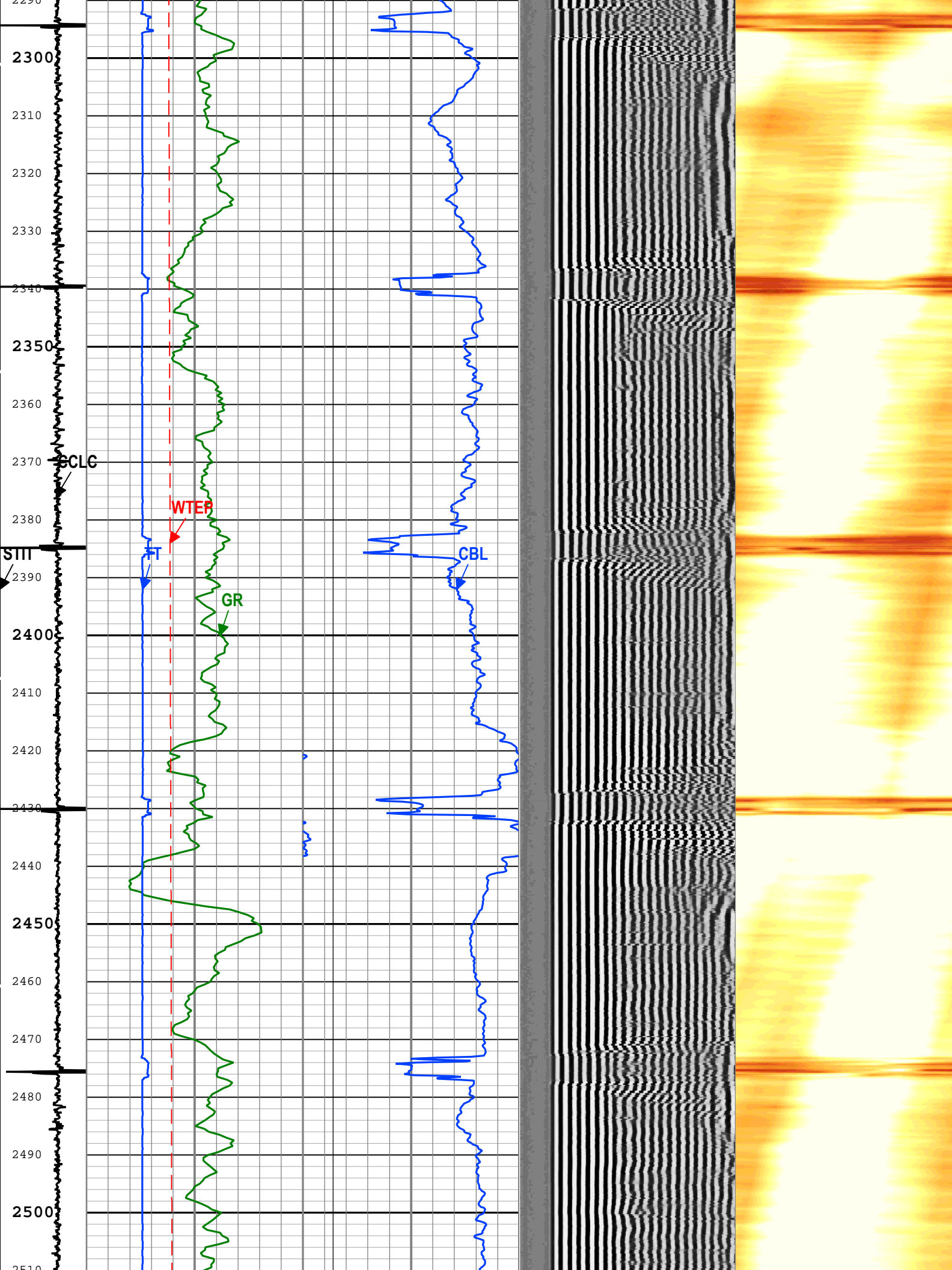


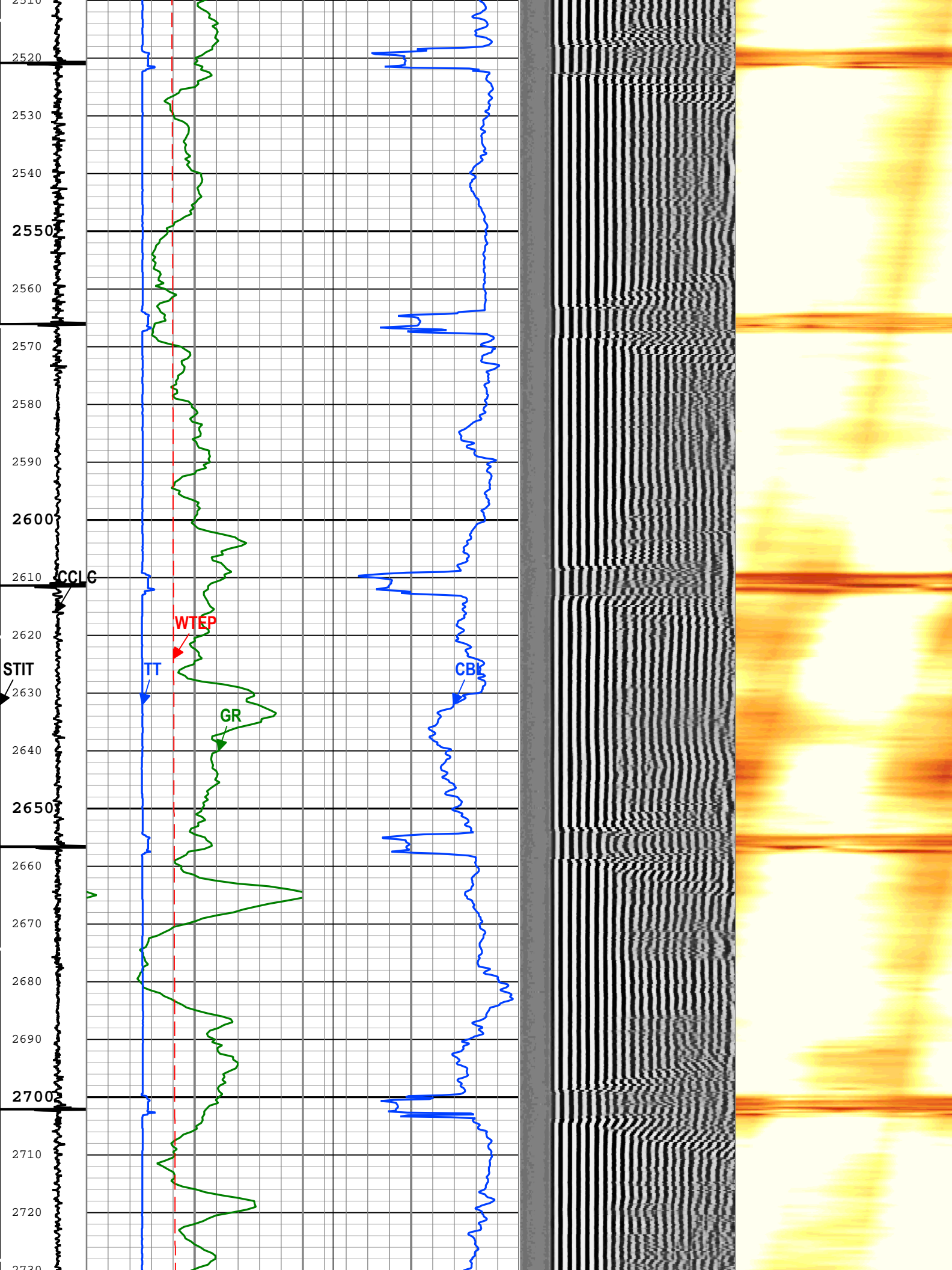


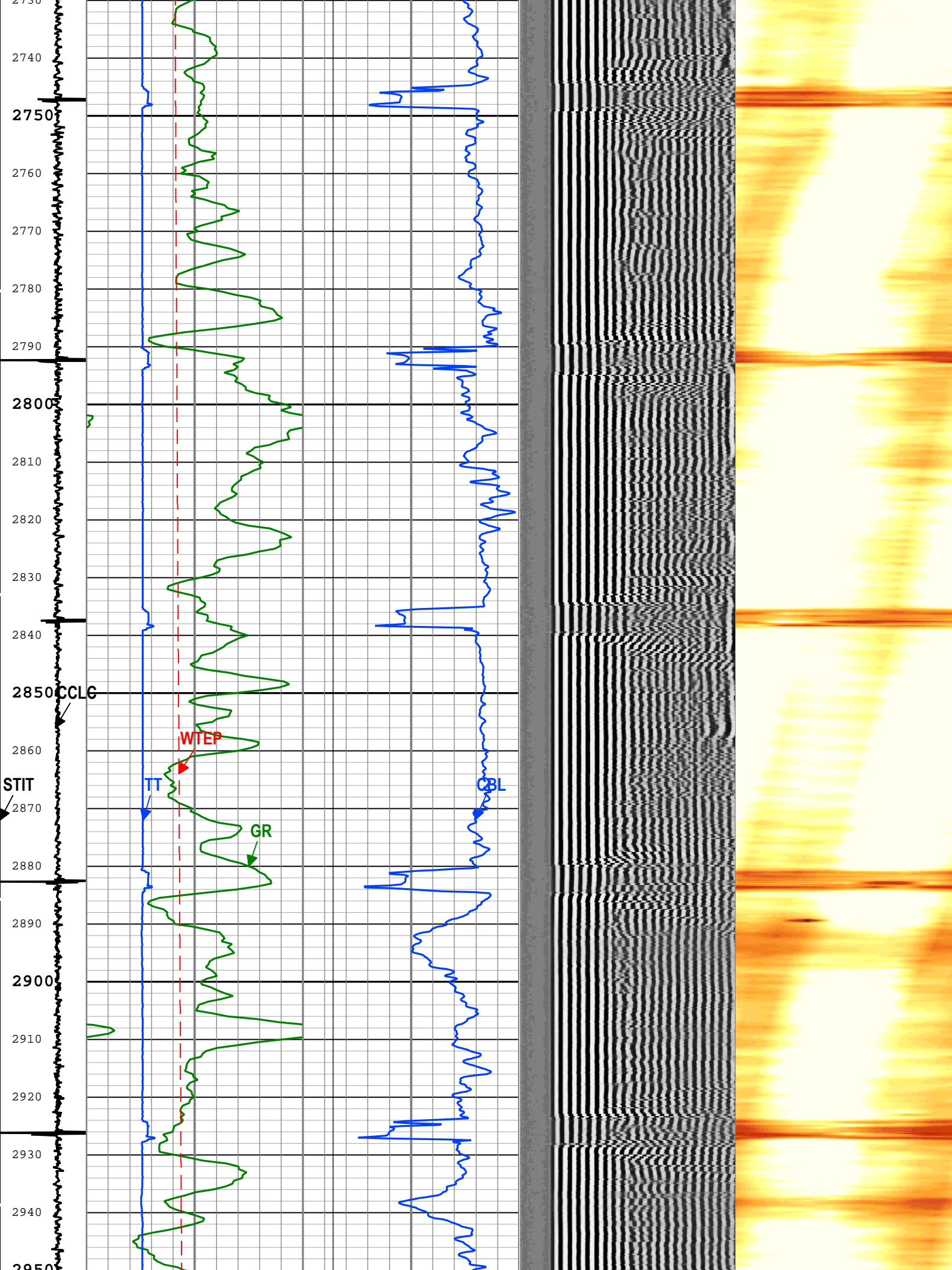


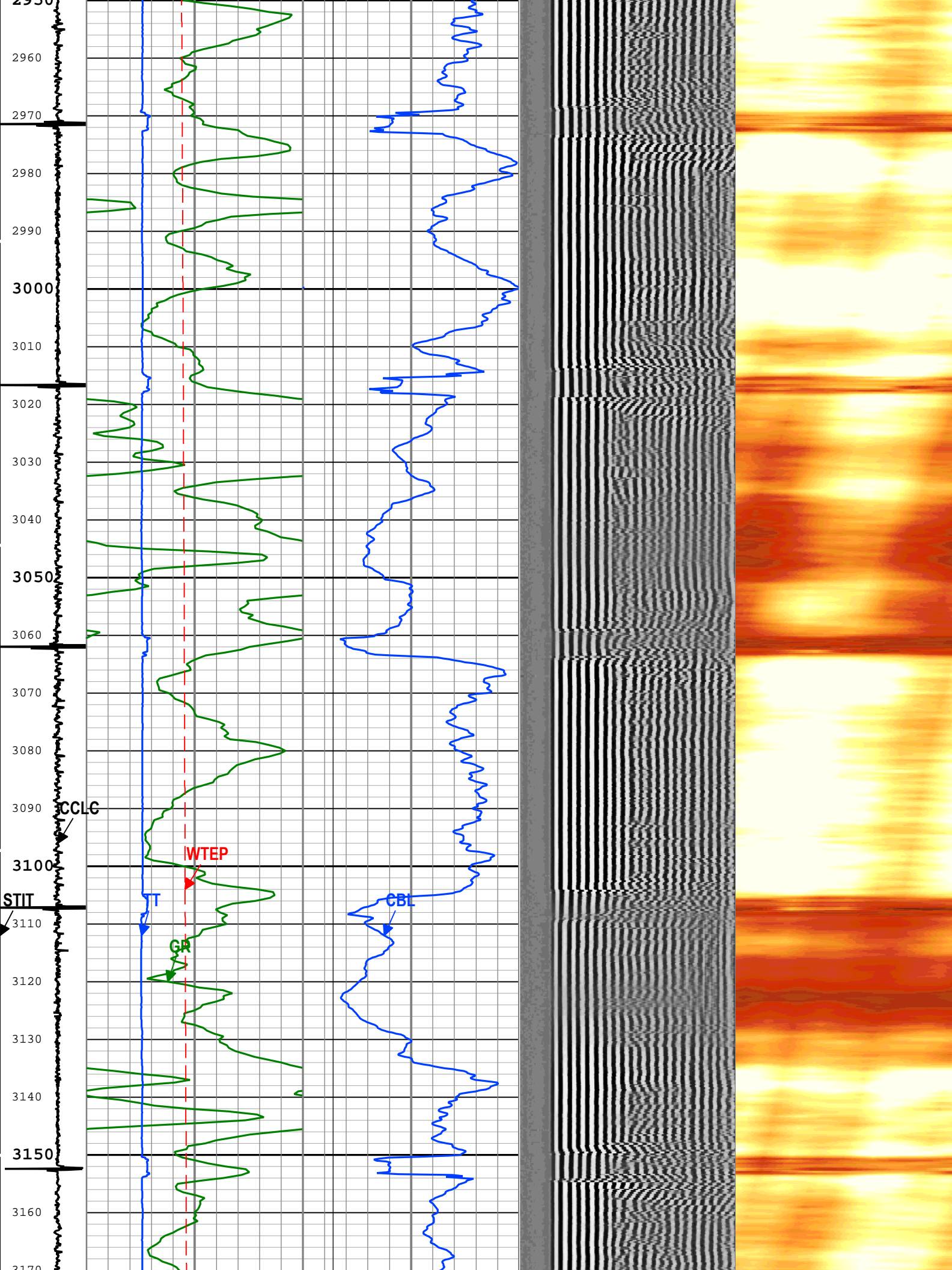


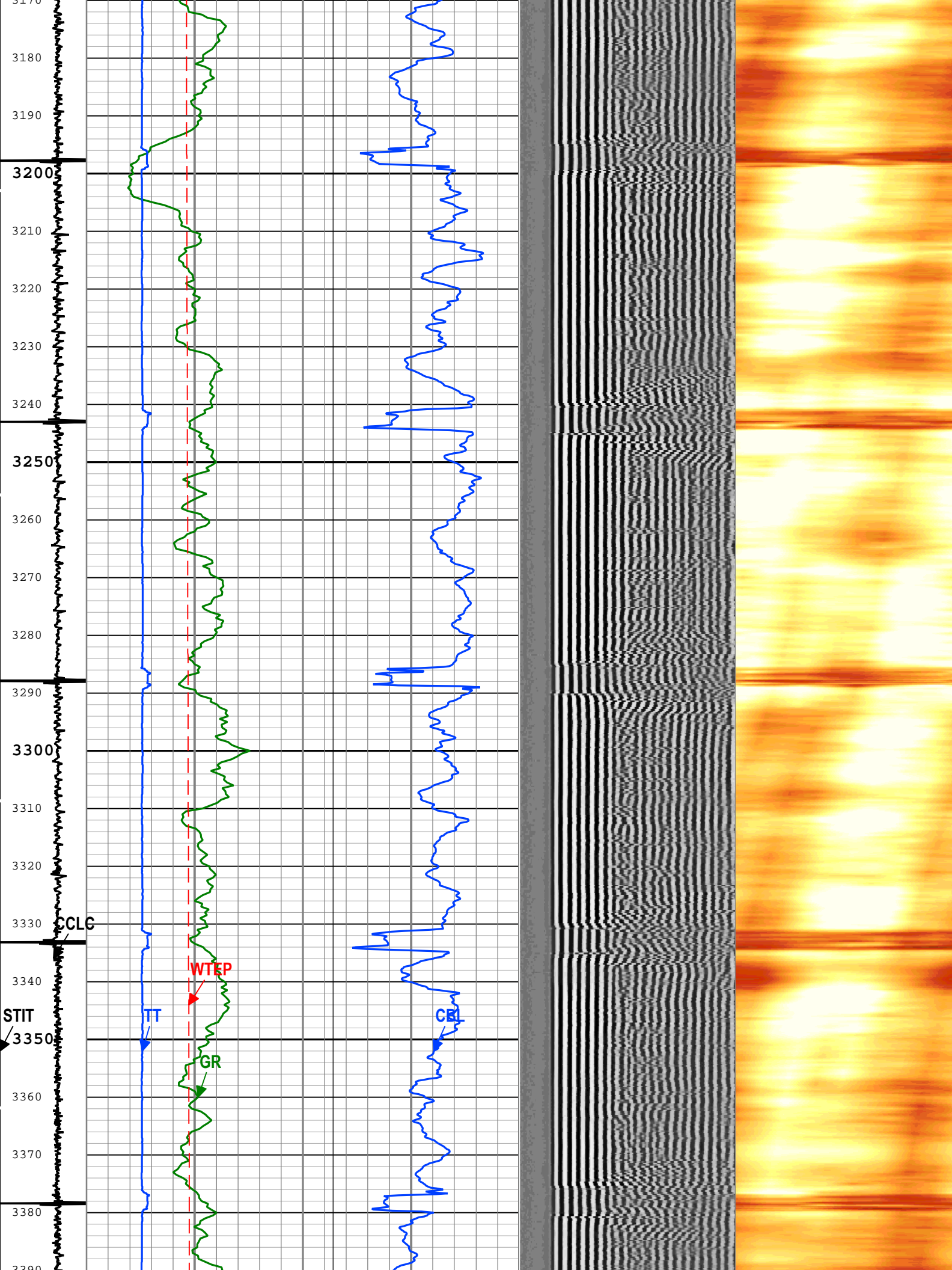


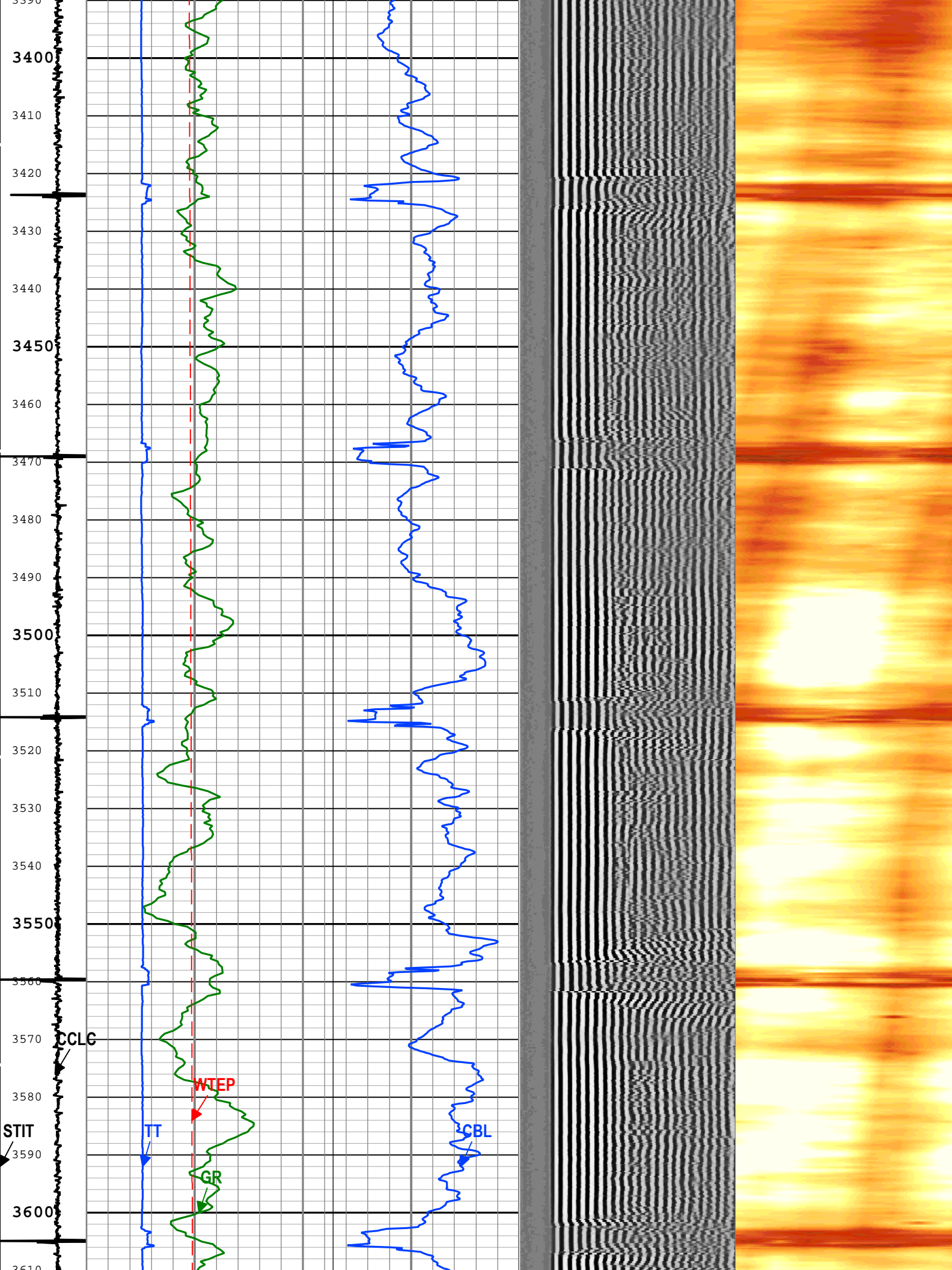


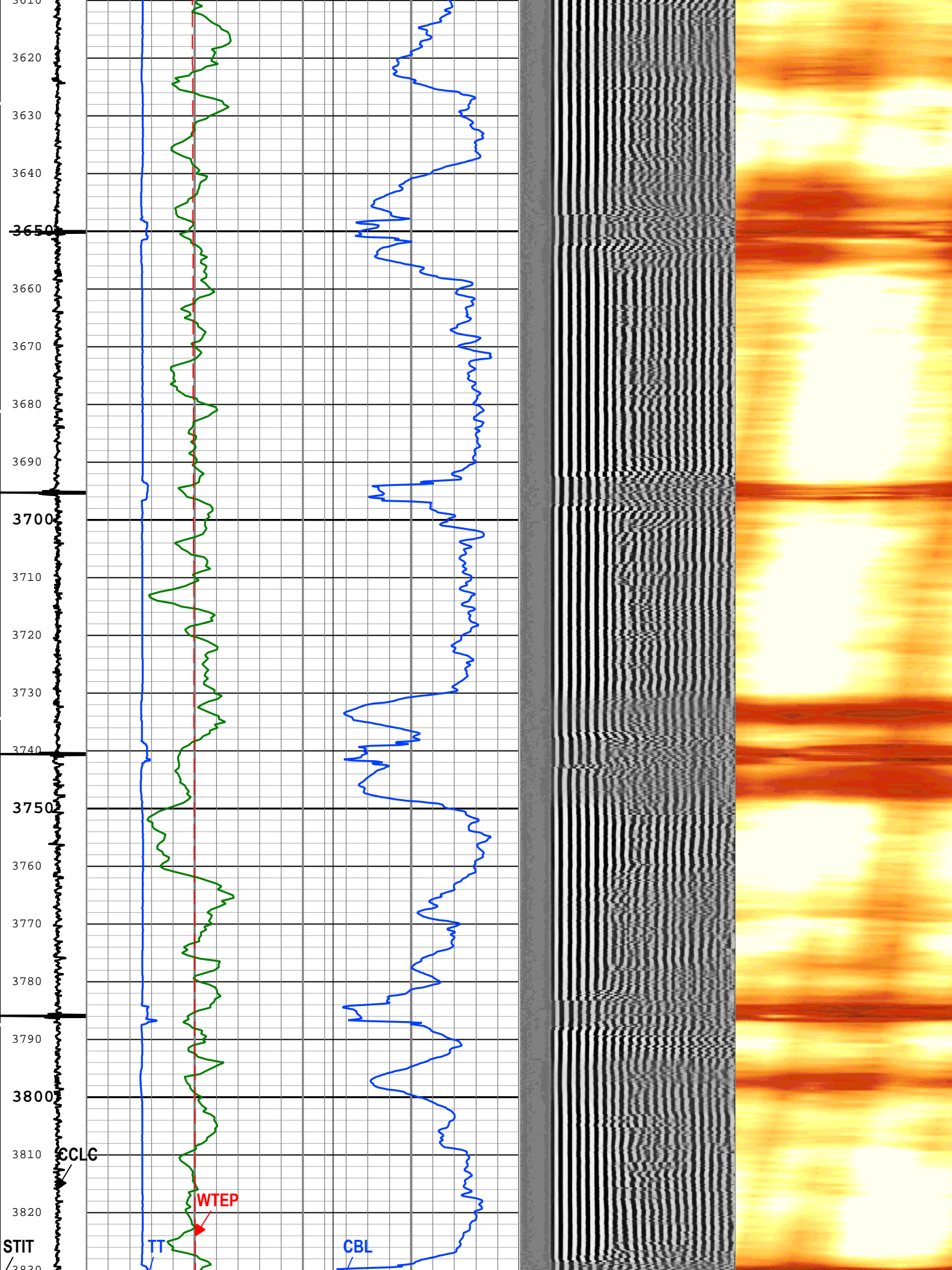


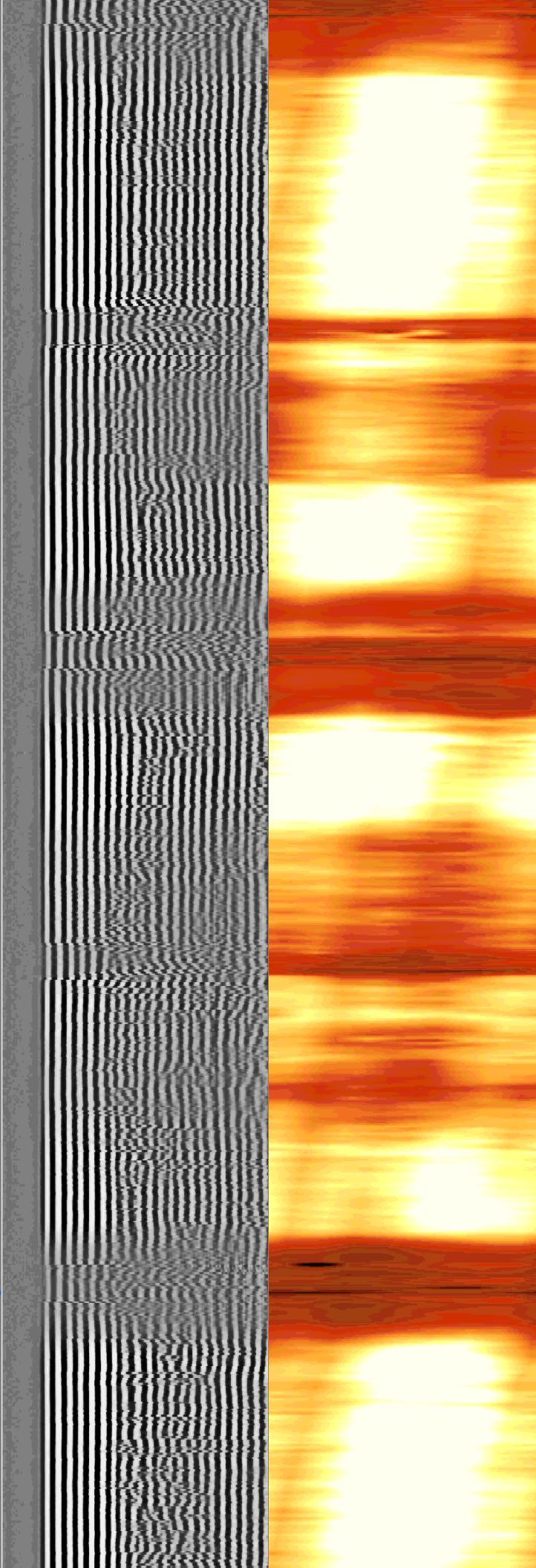
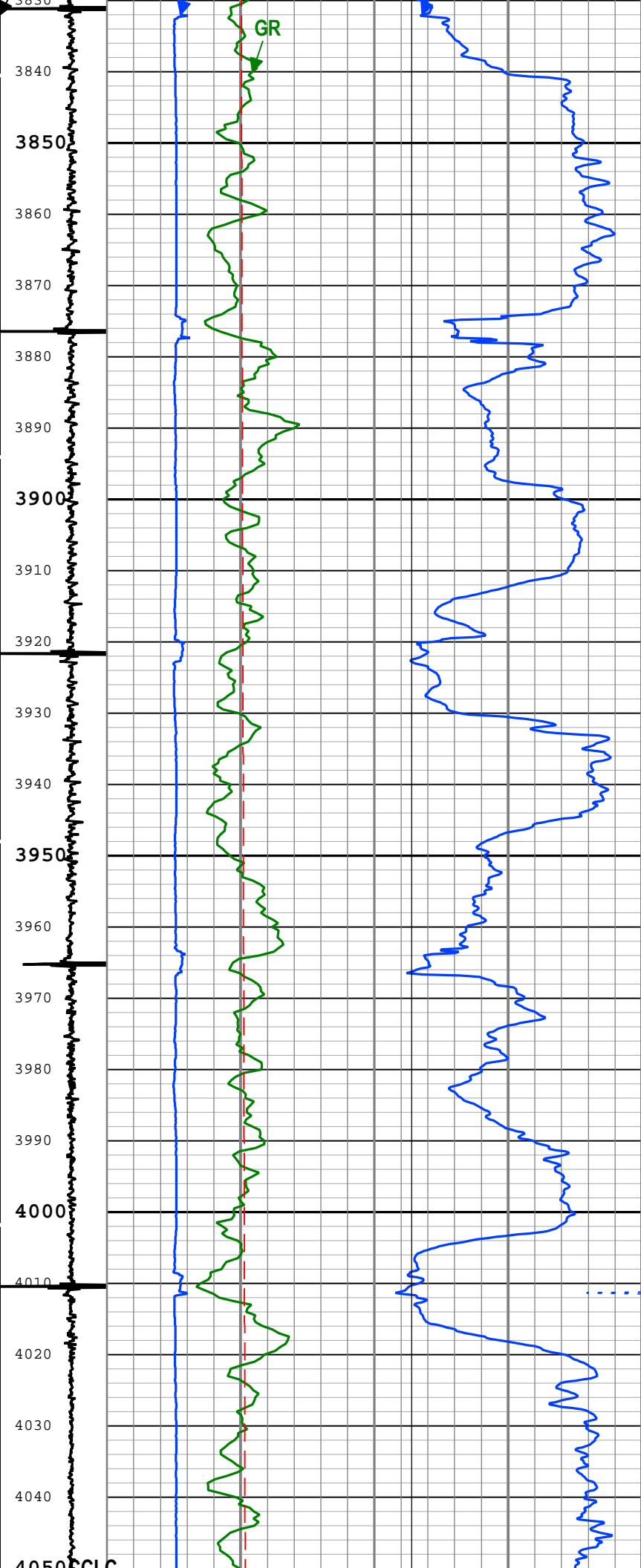


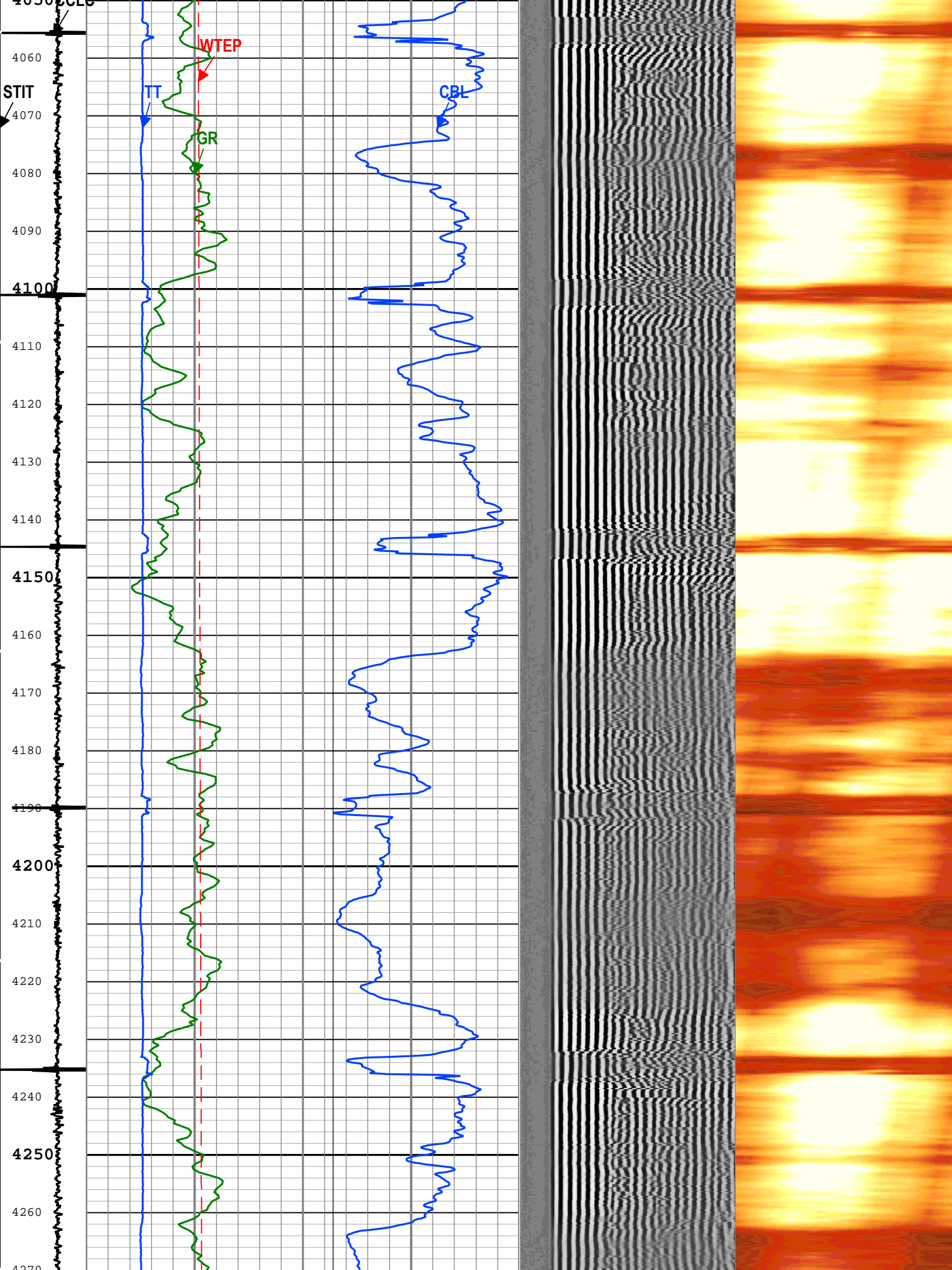


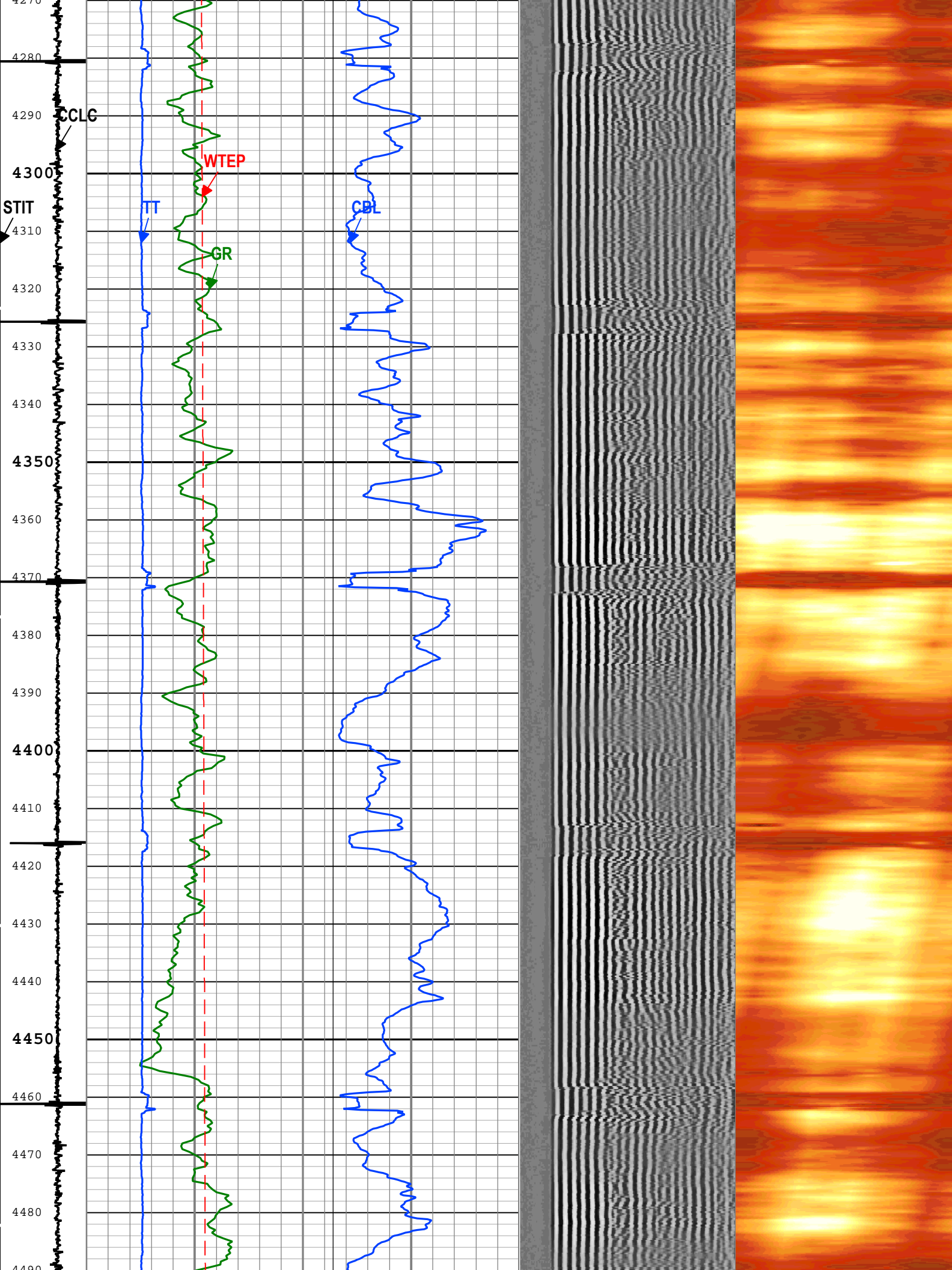


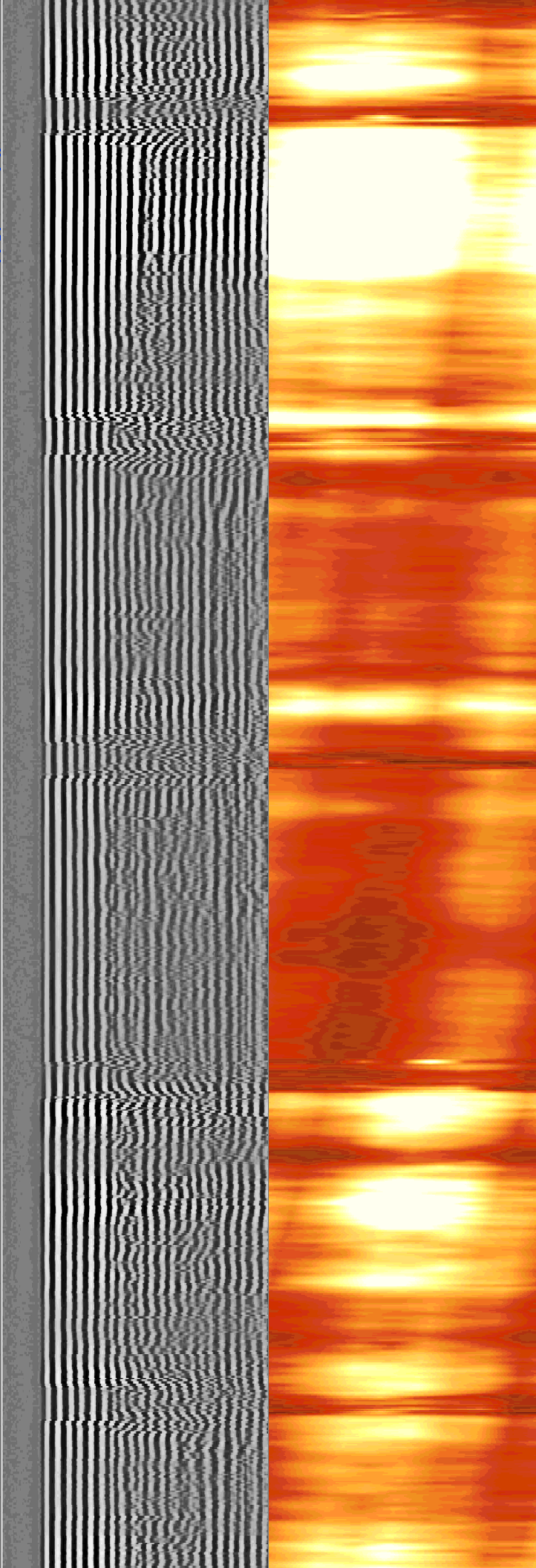
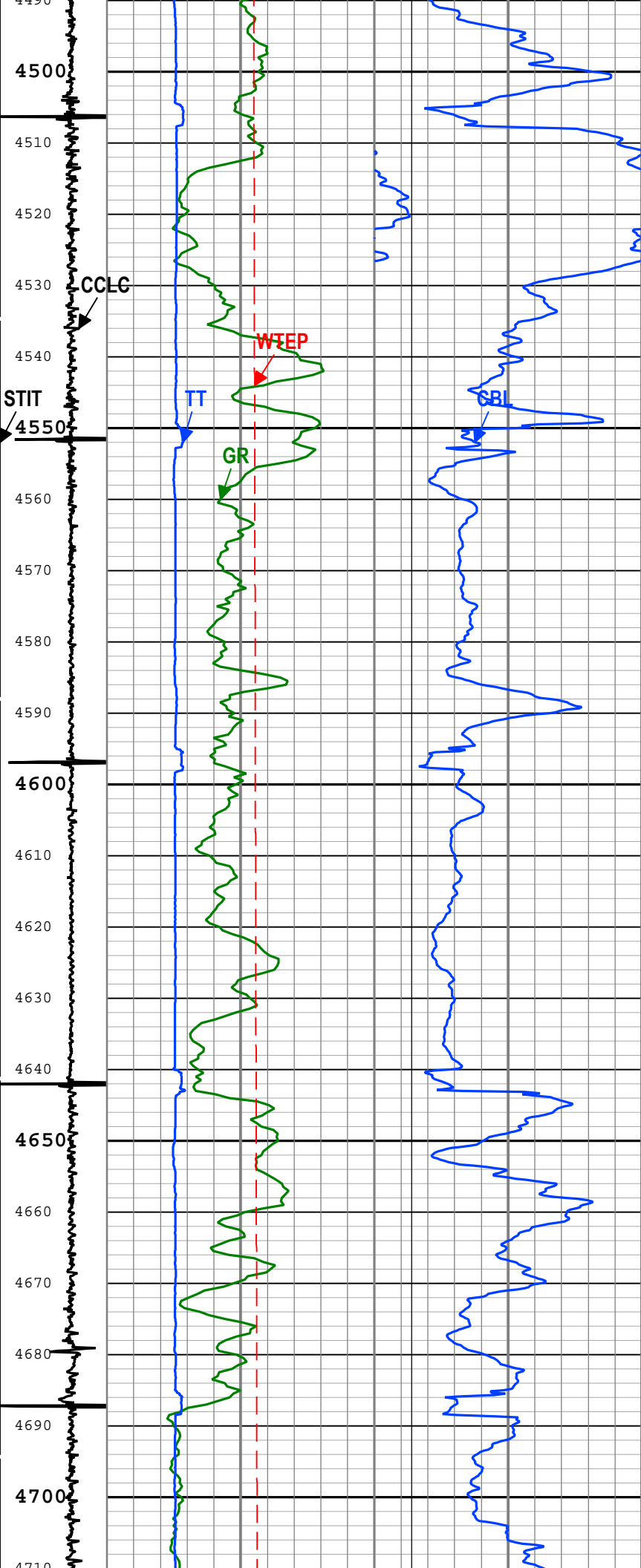


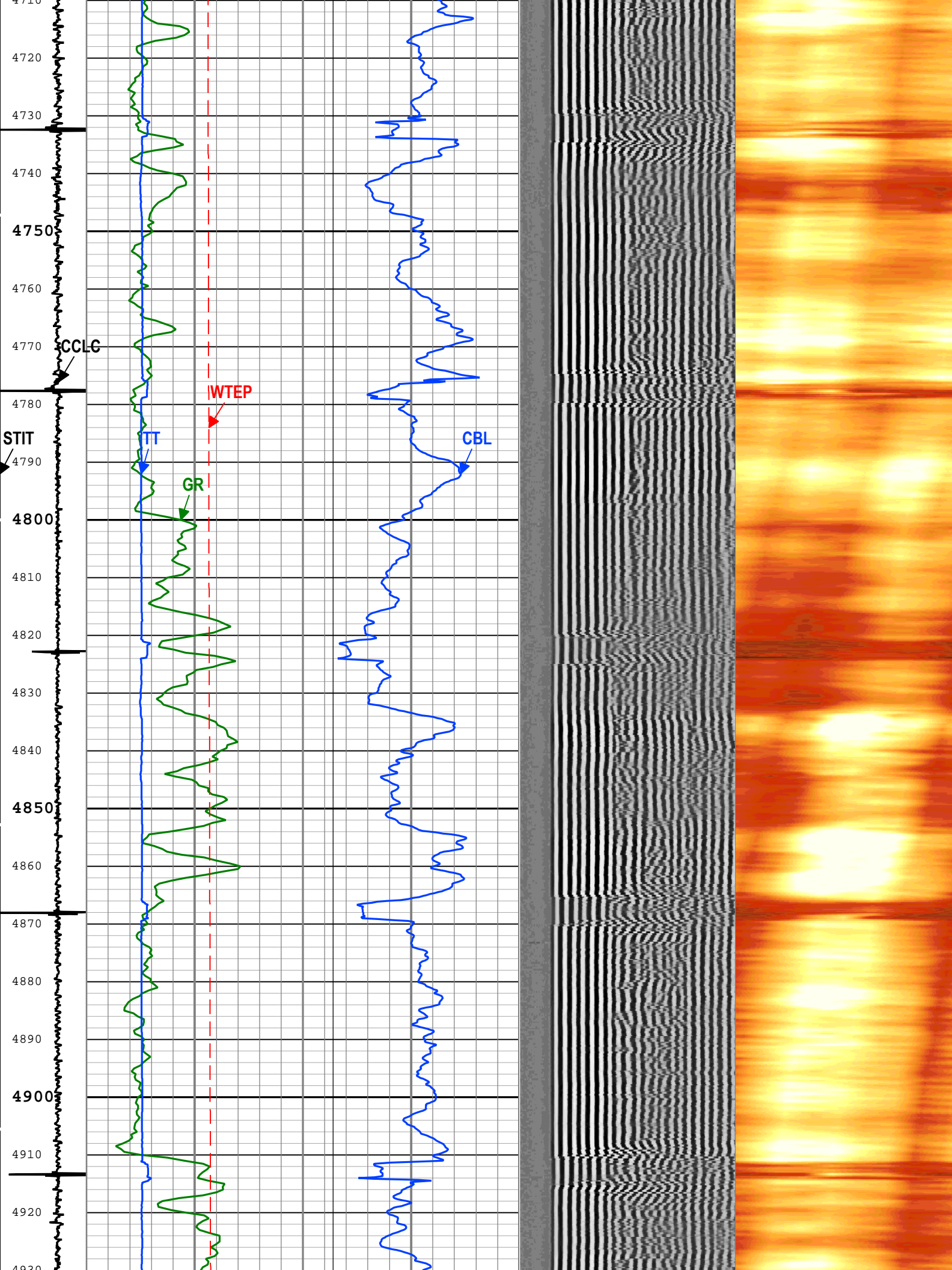


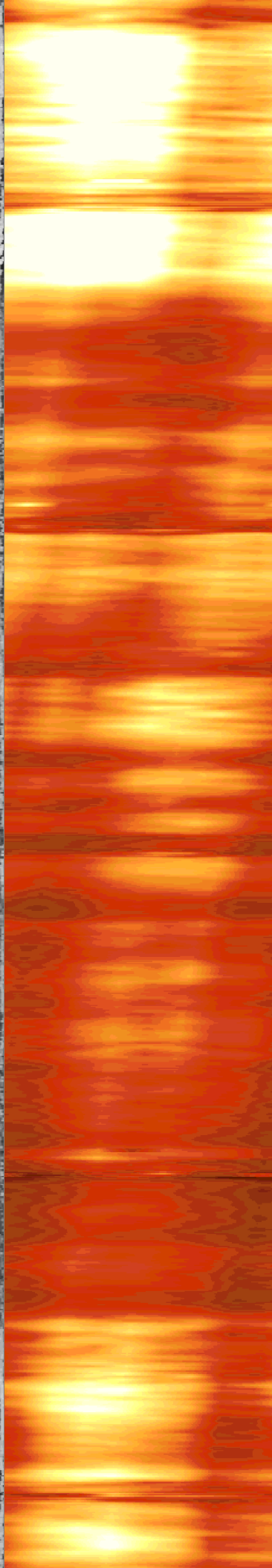
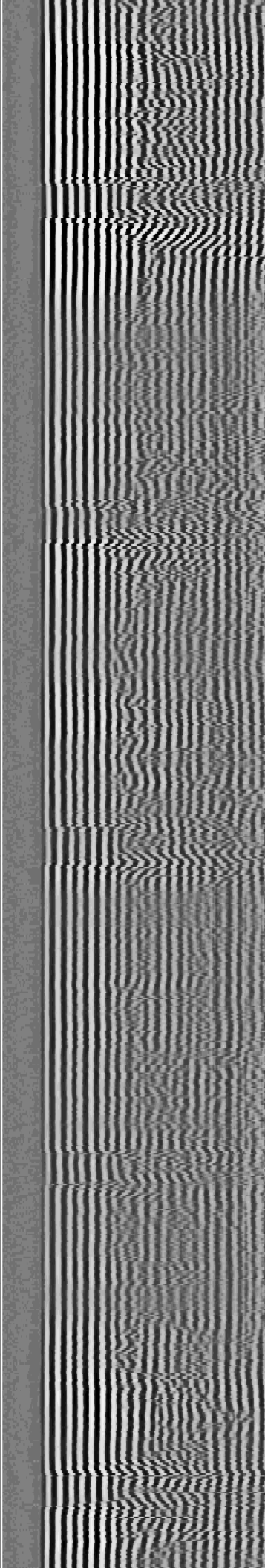
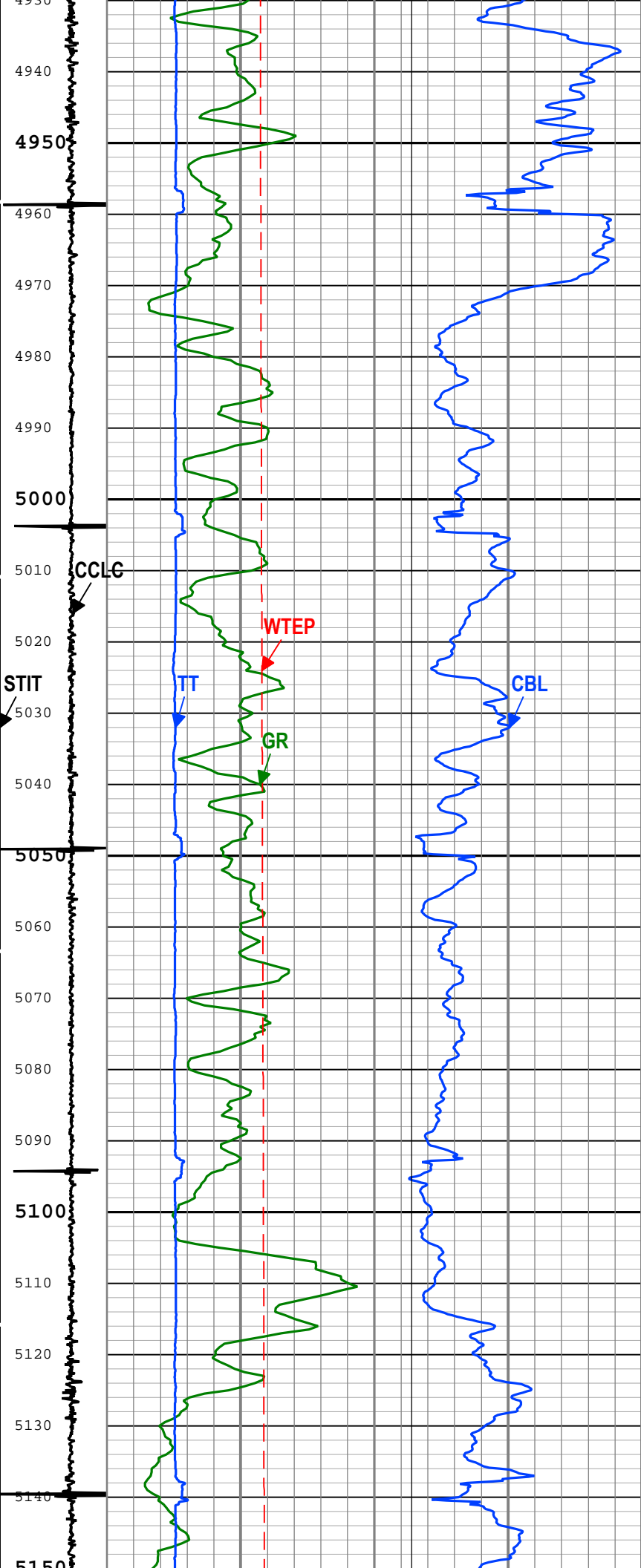


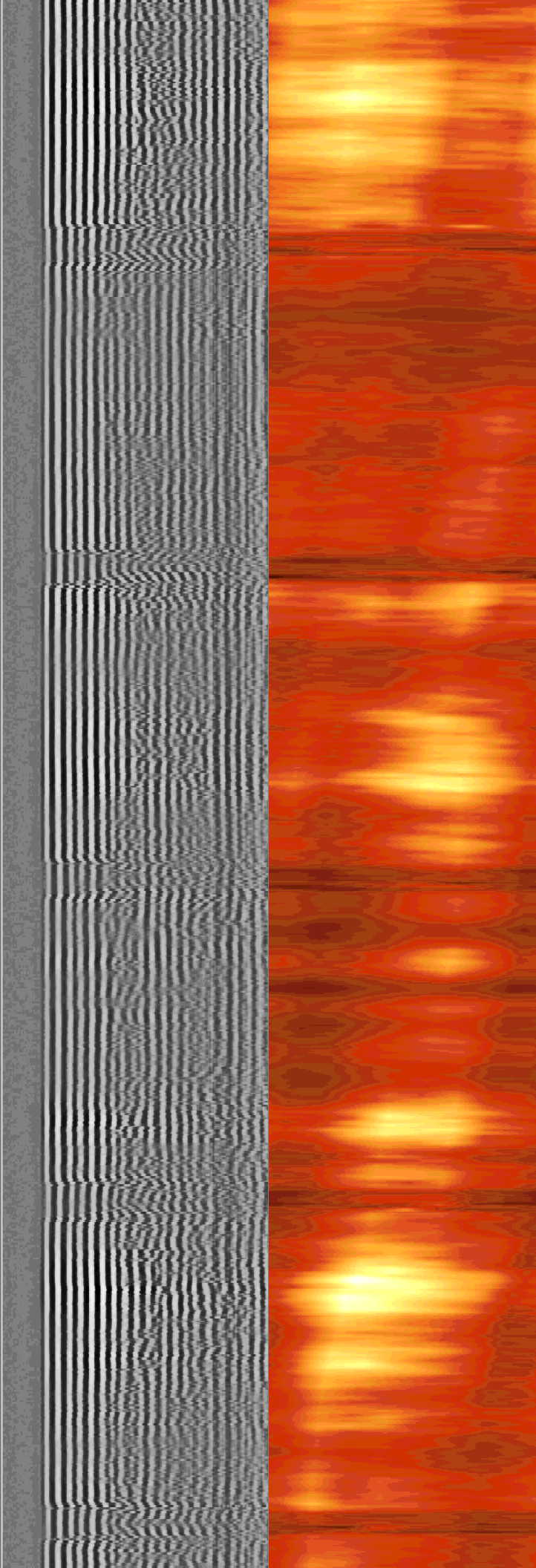
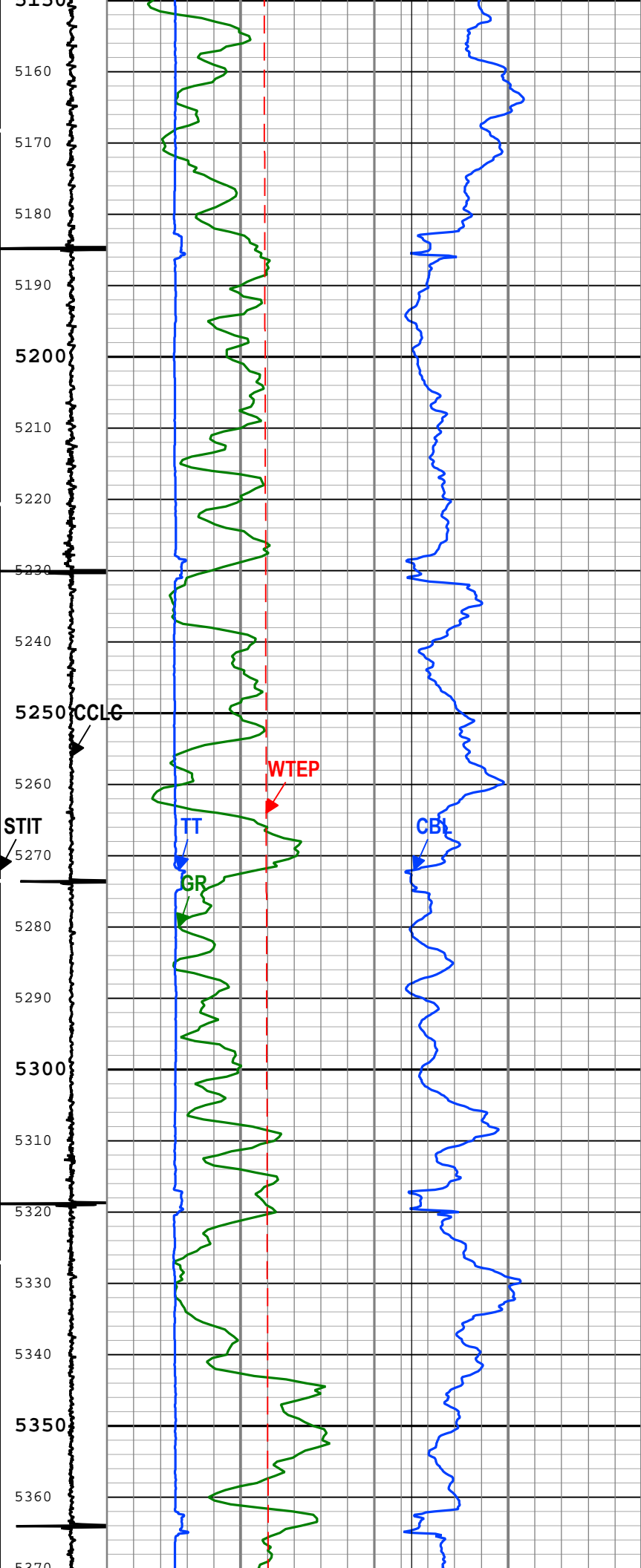


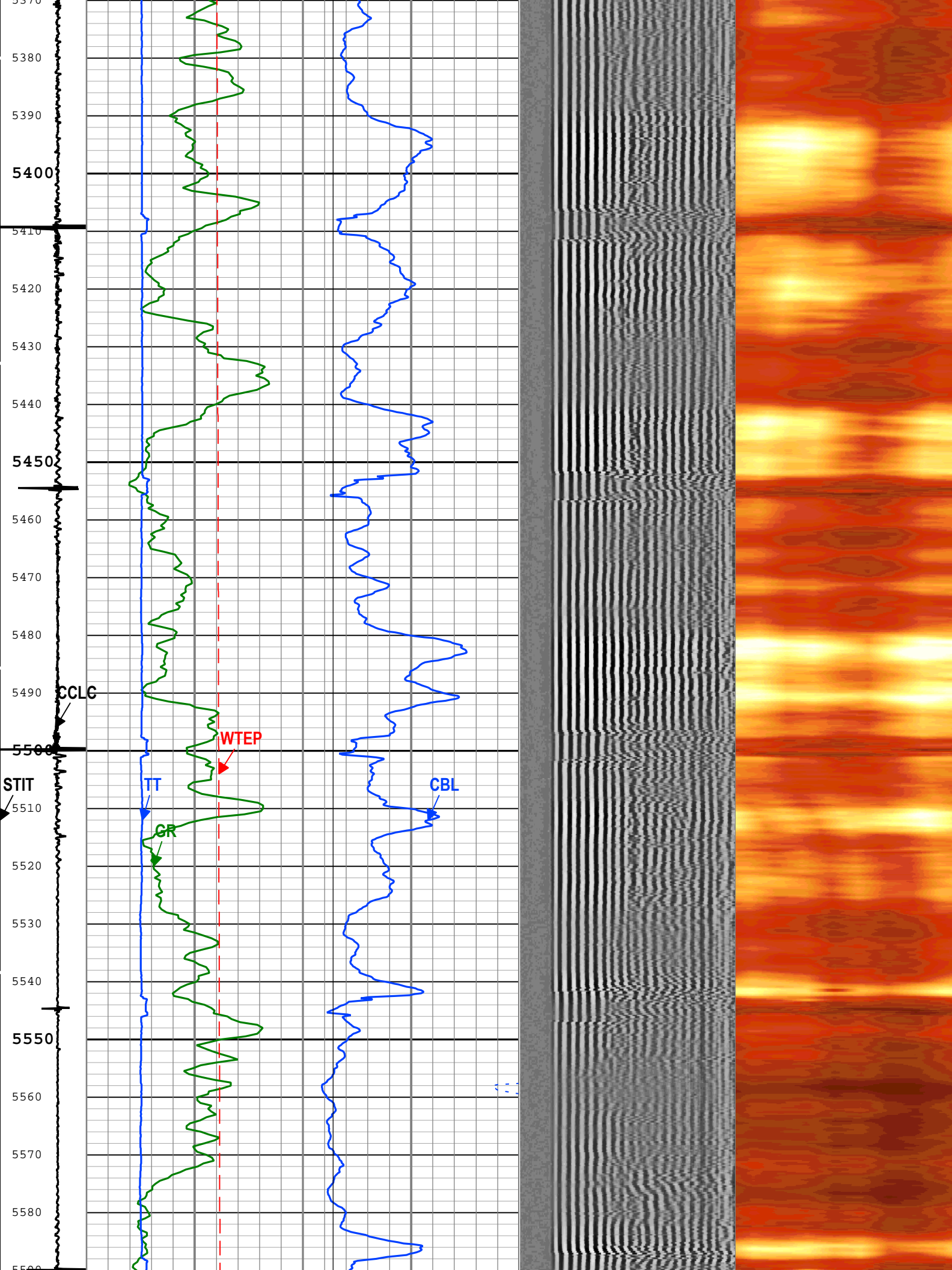


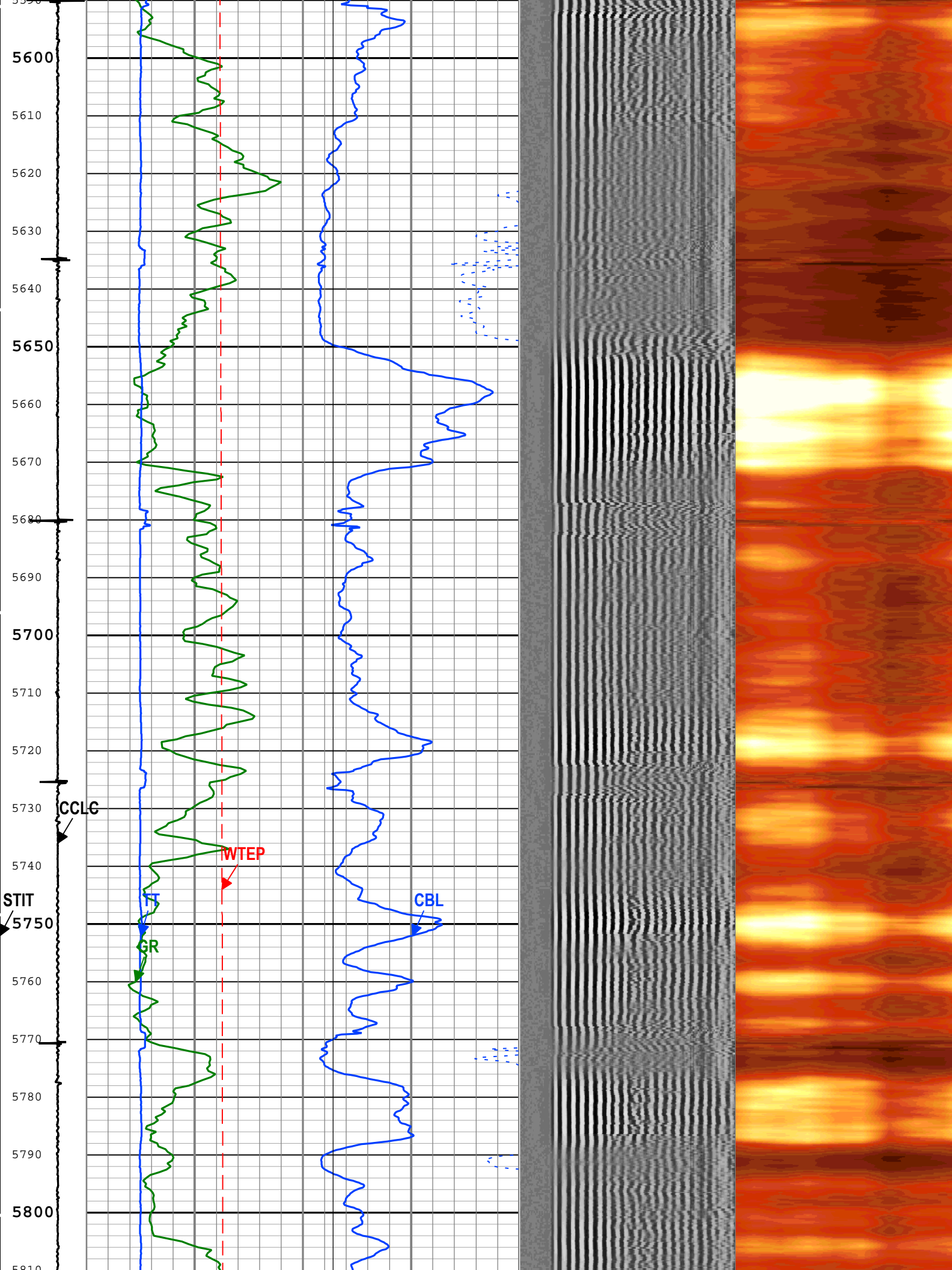


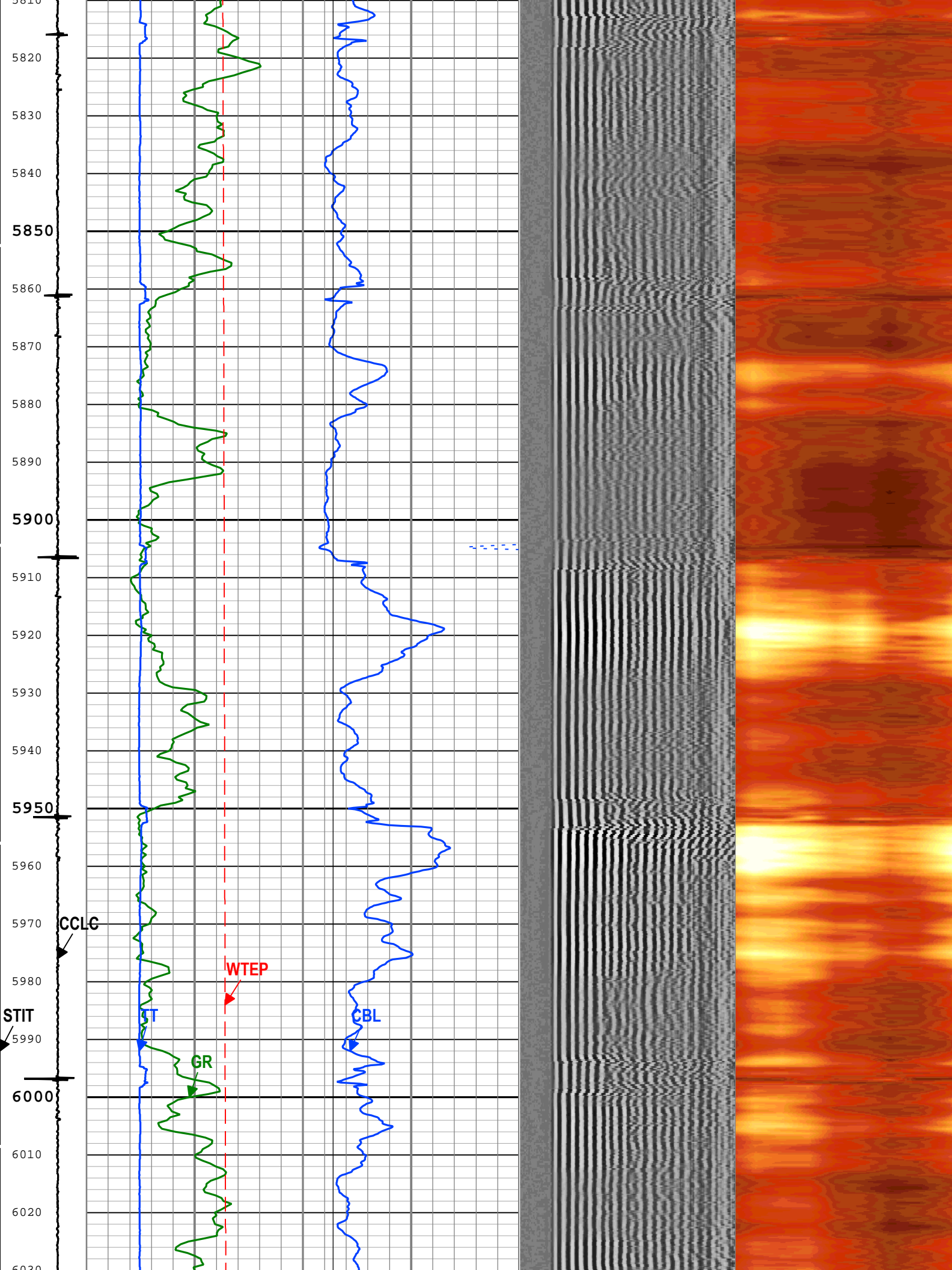


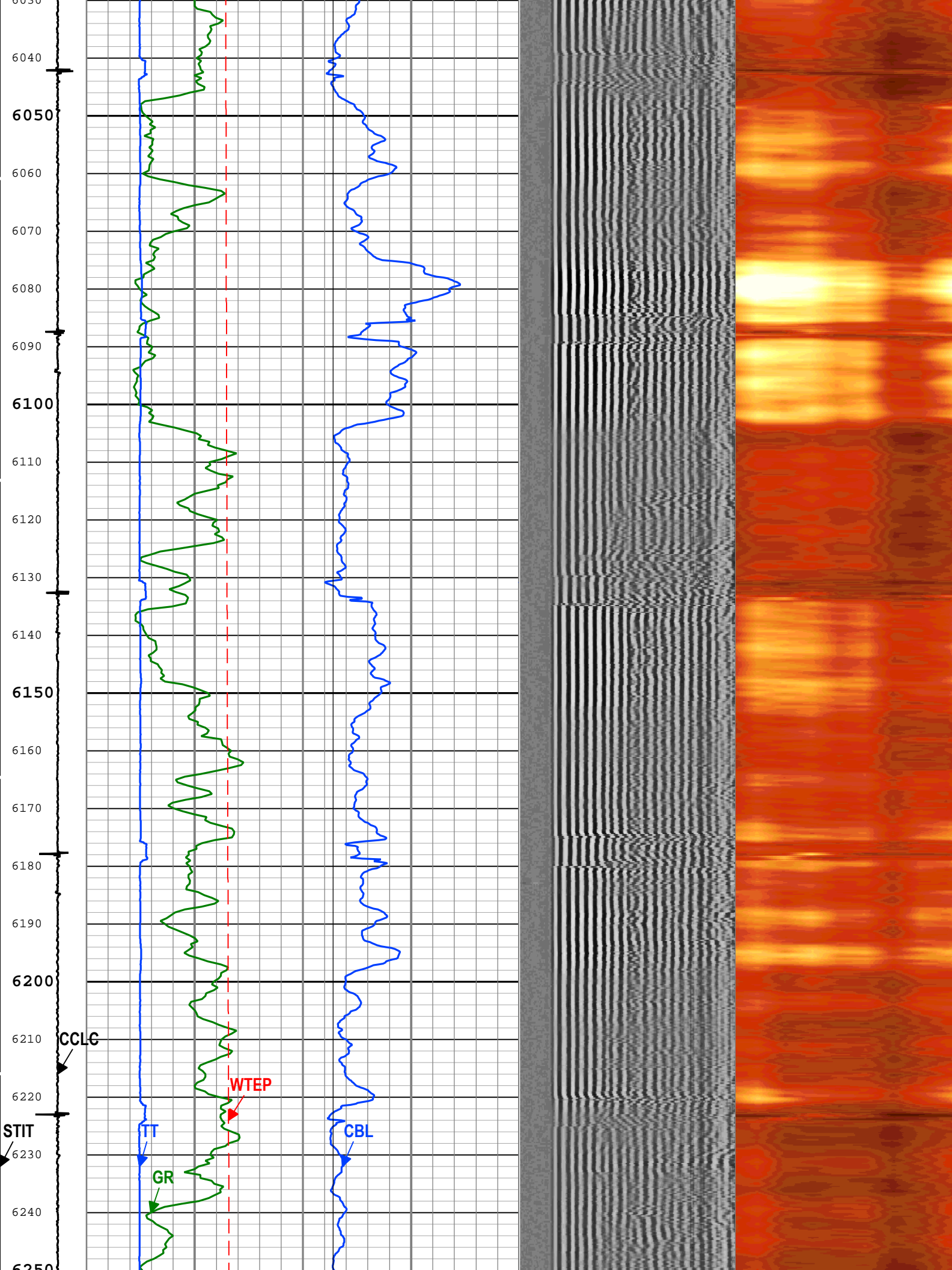


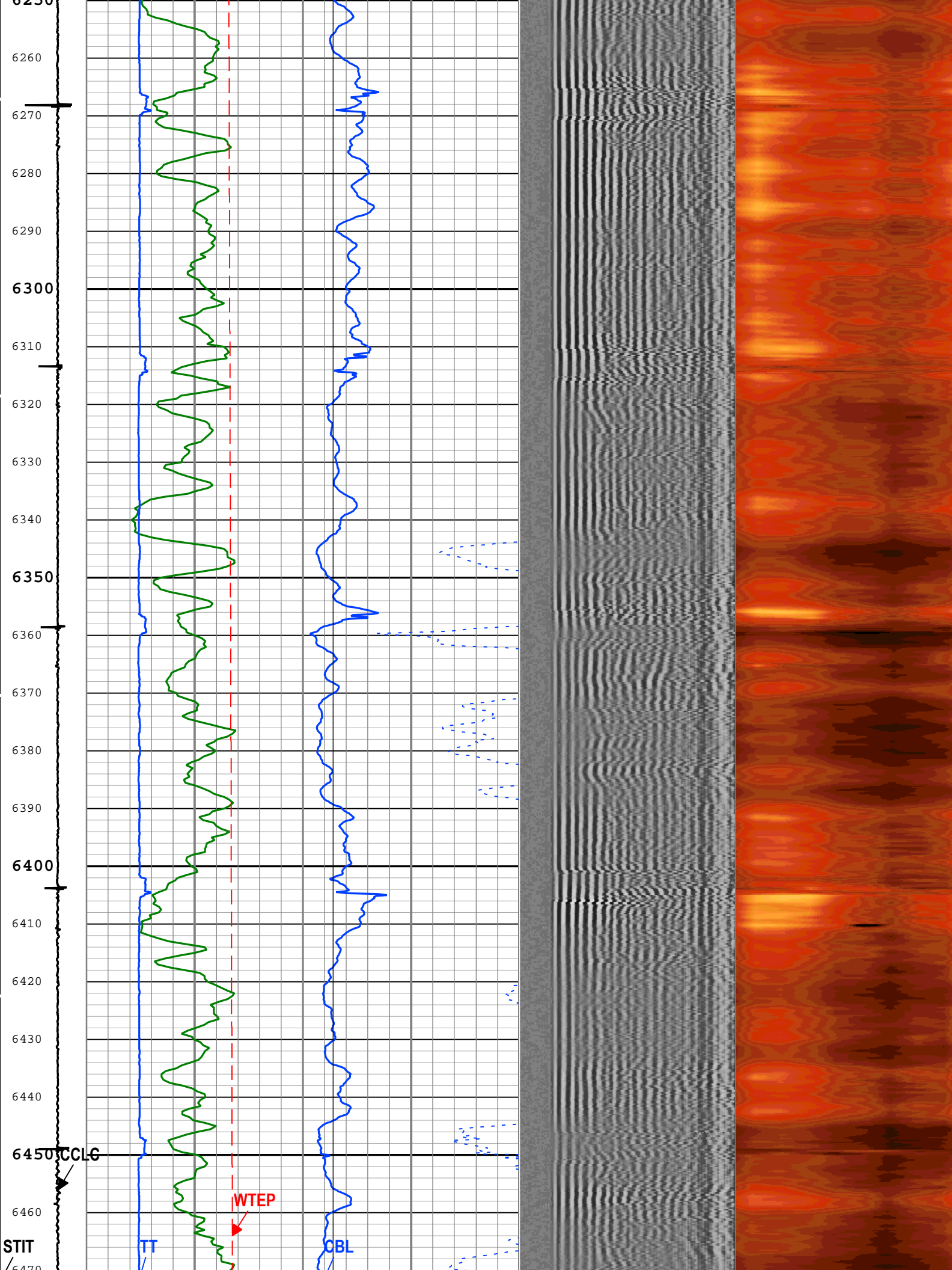


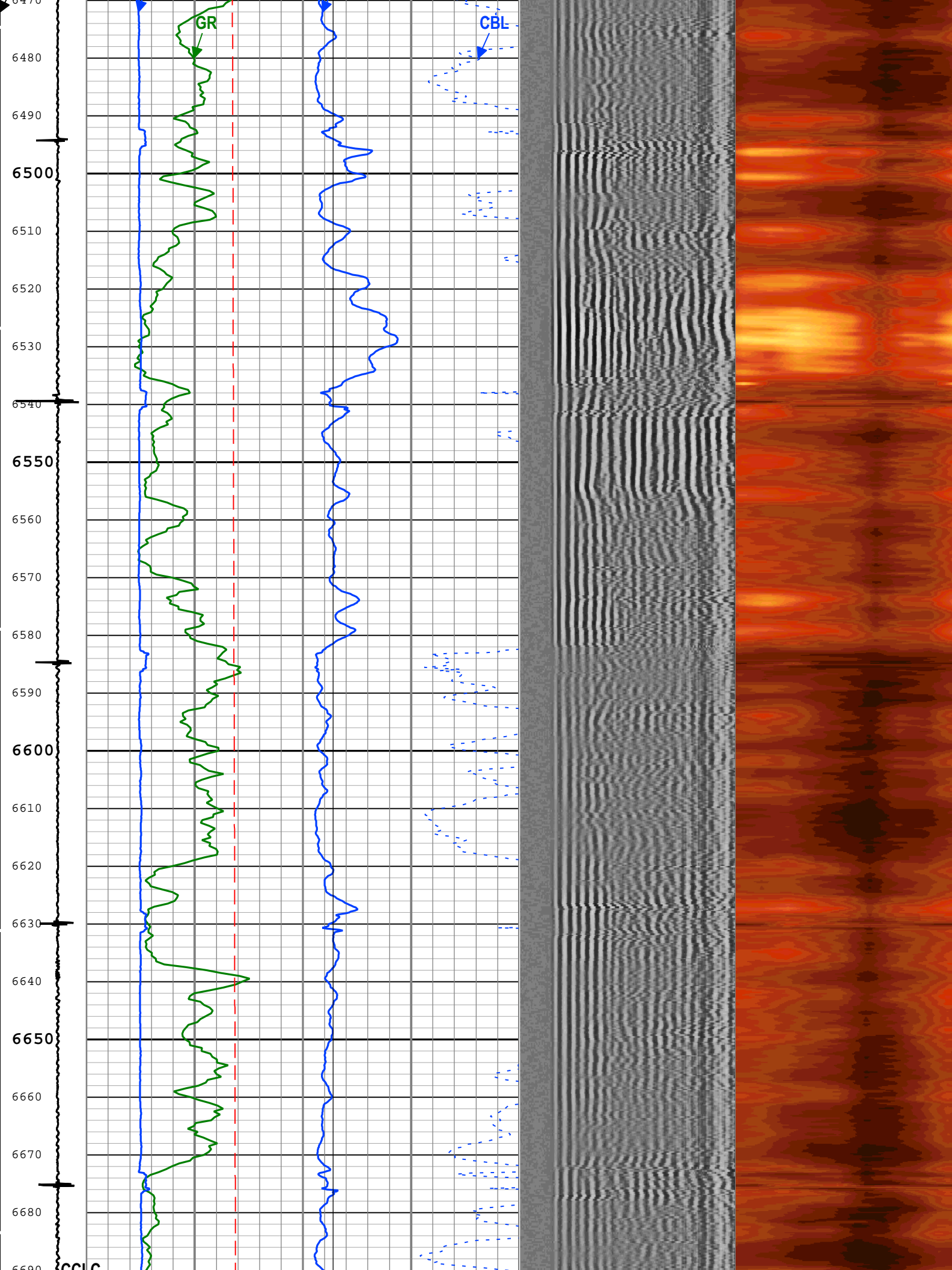


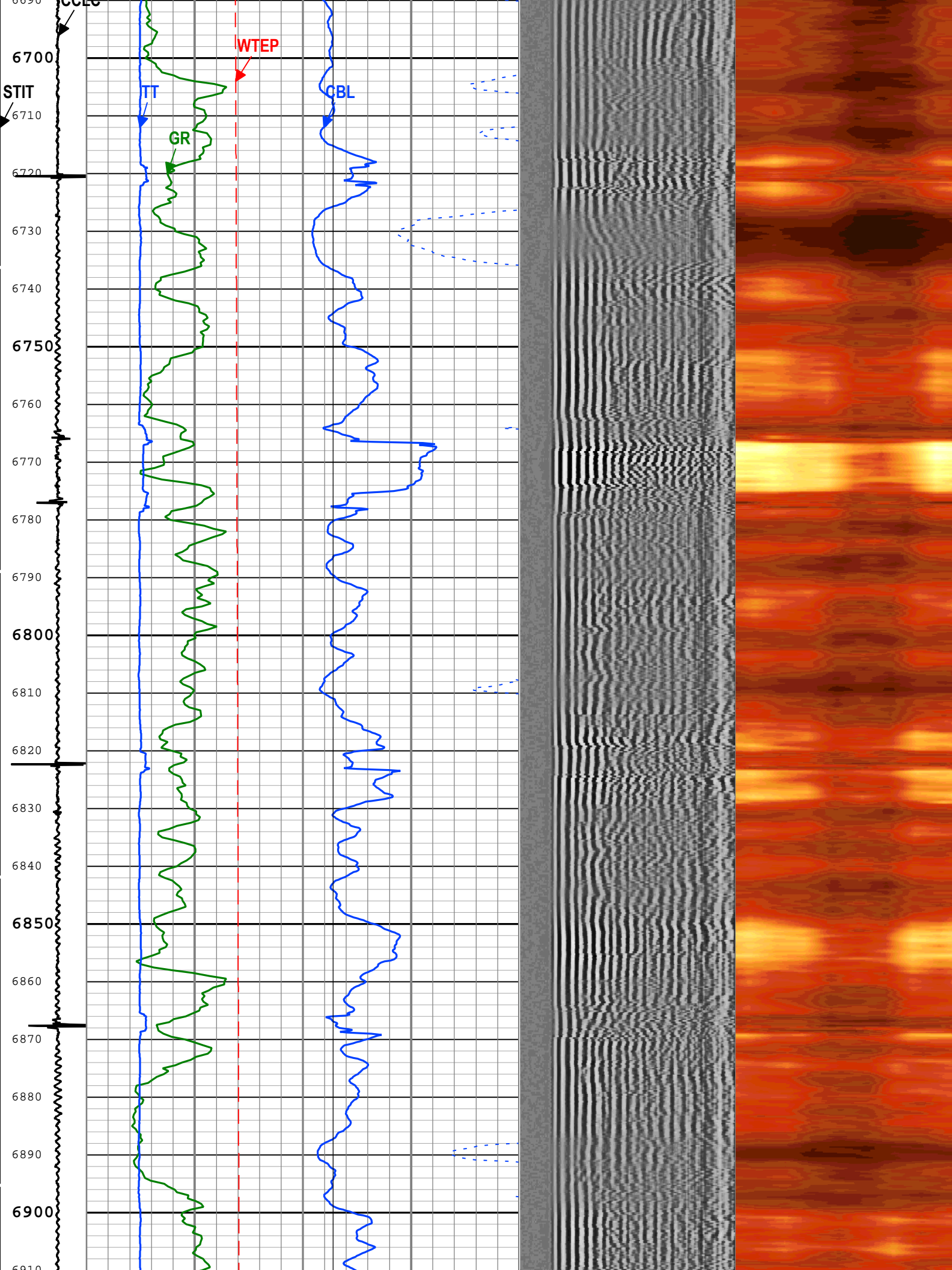


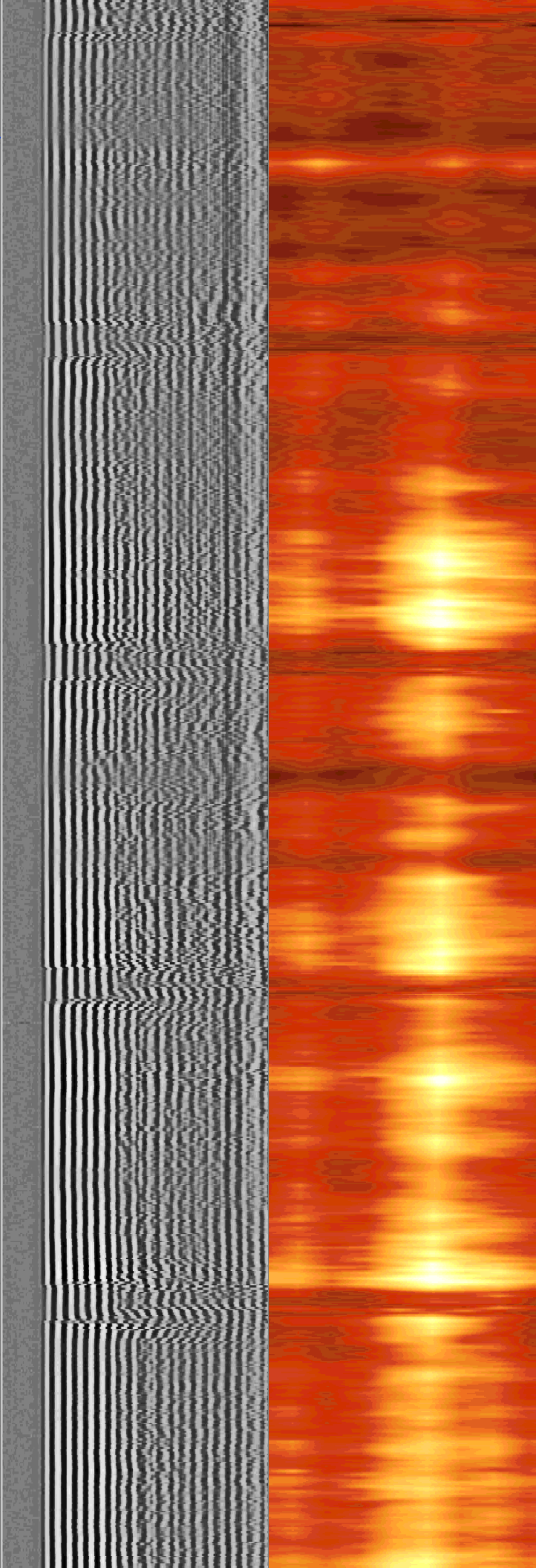
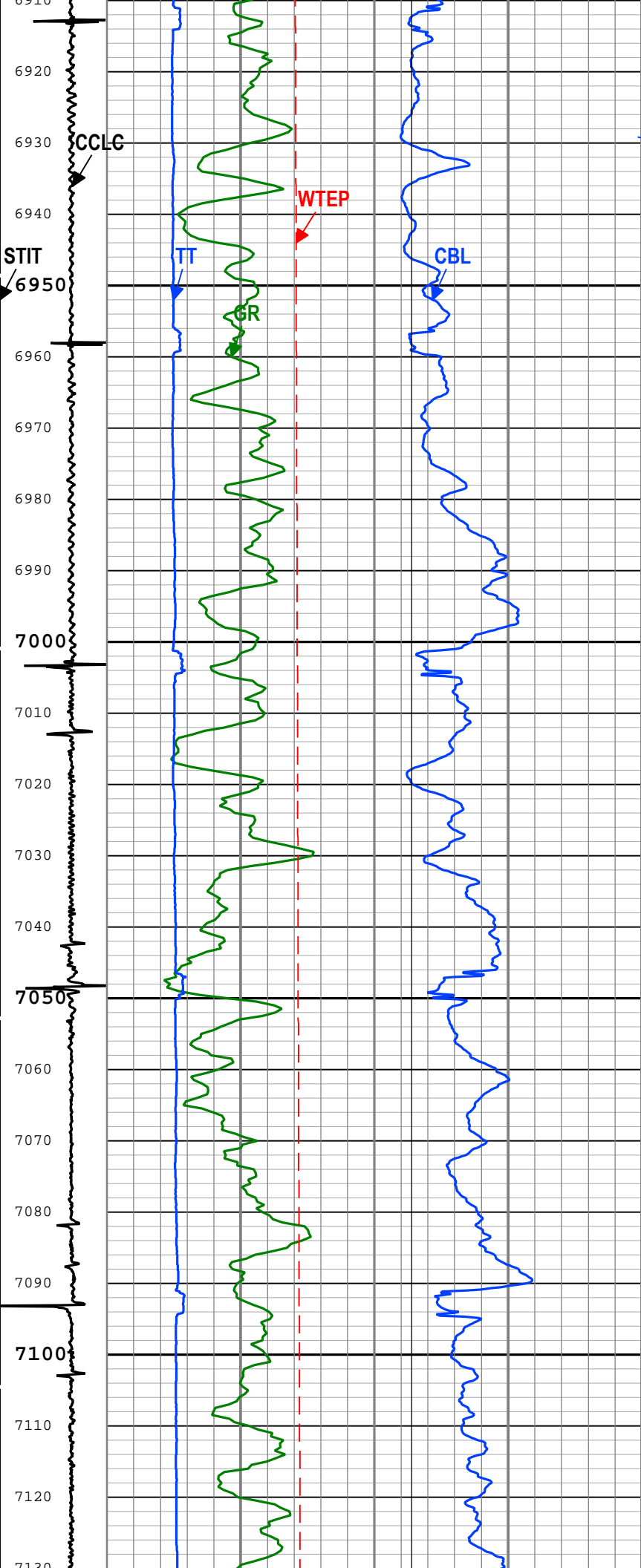


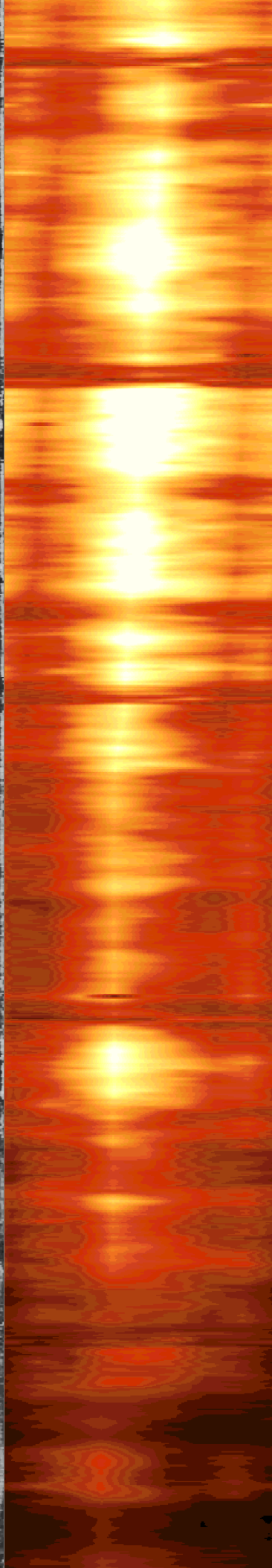
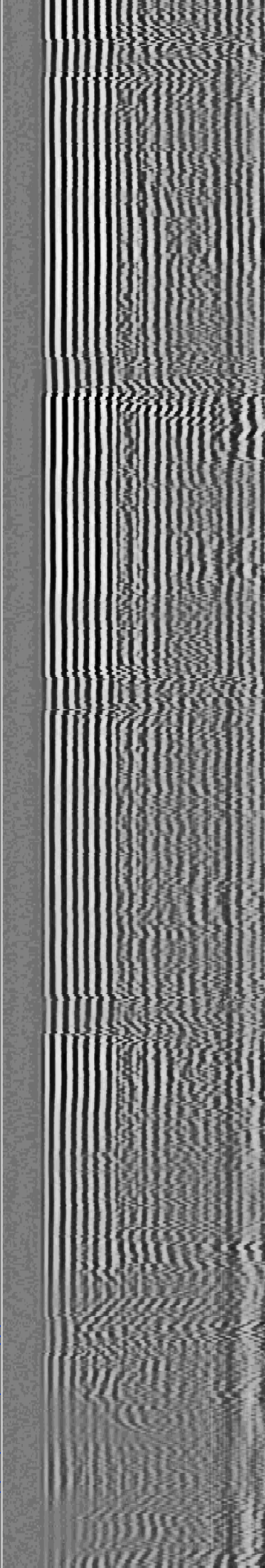
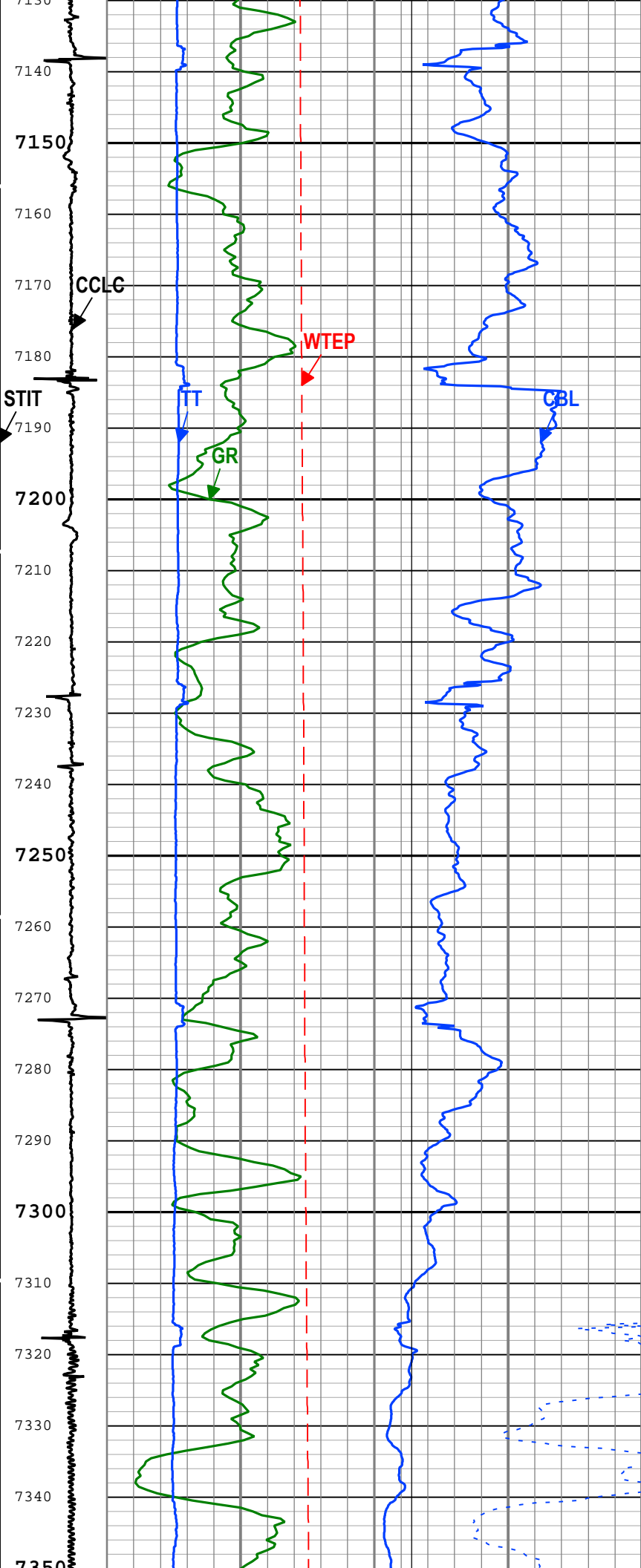


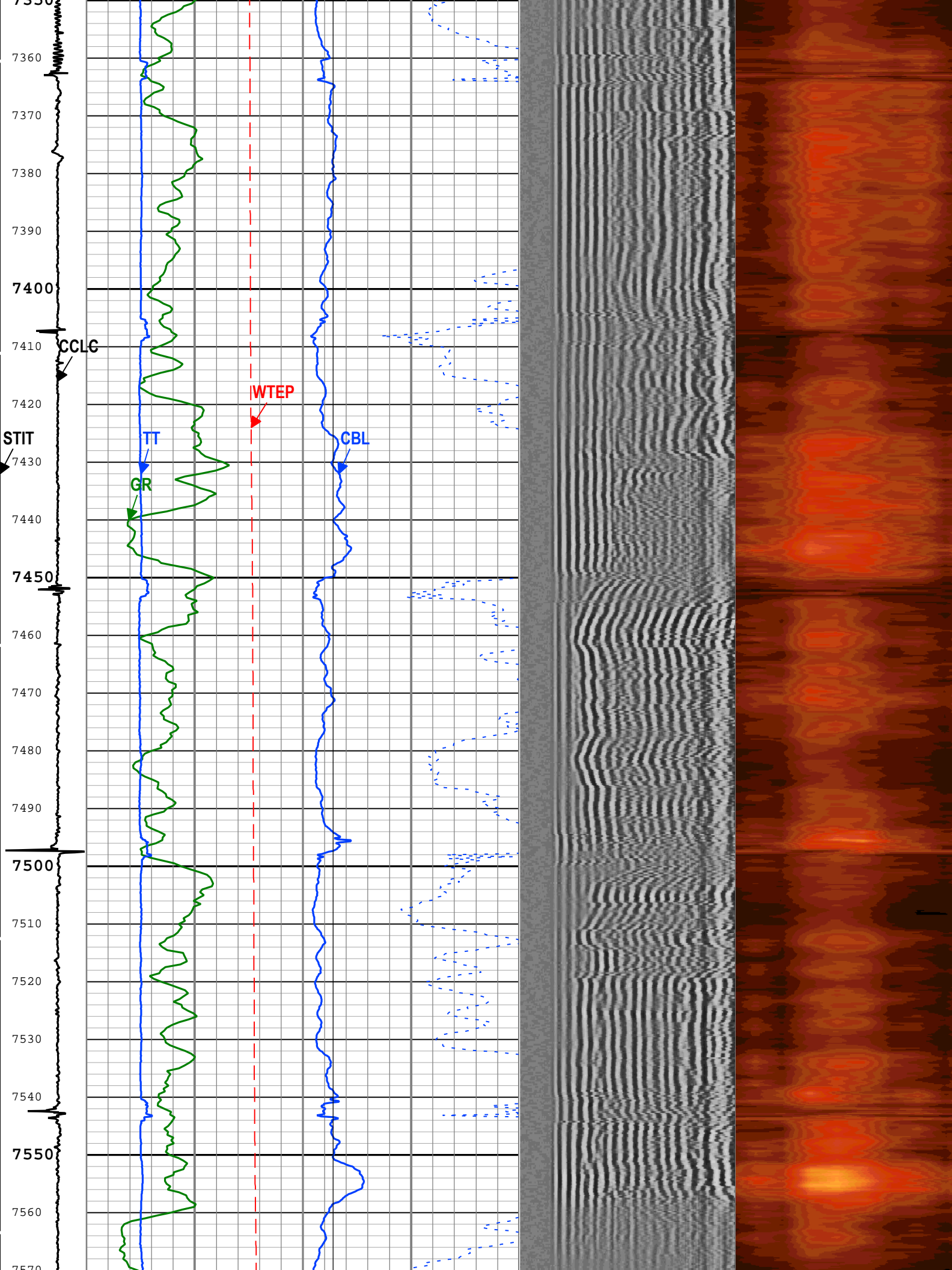


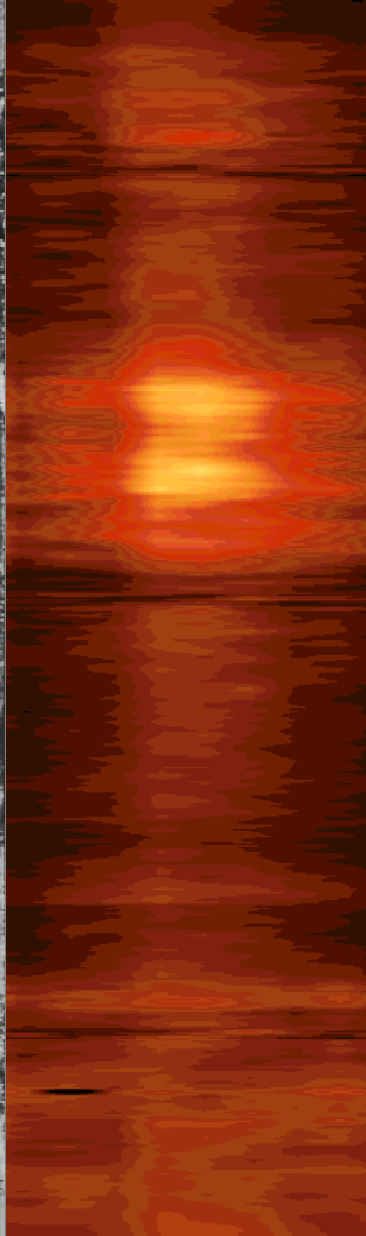
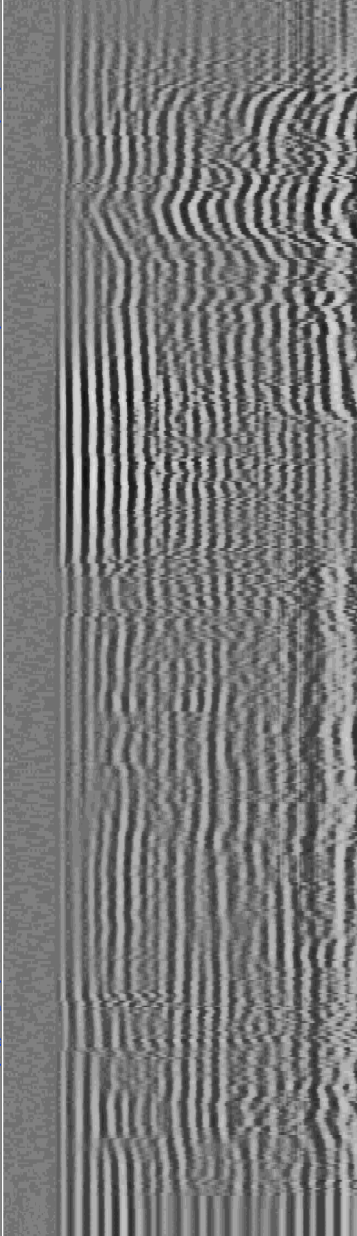
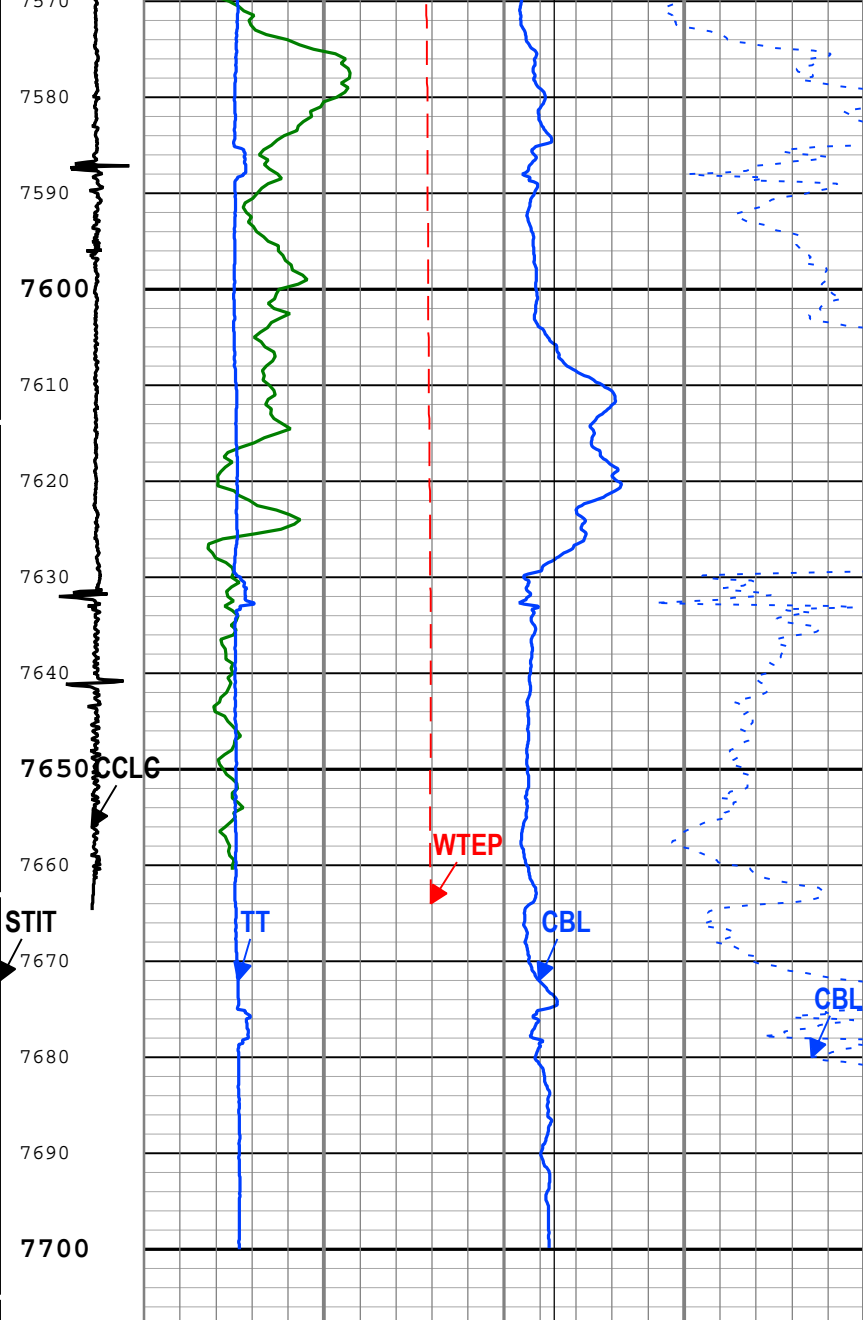












Stuck Tool Indicator, Total (STIT)	Gamma Ray (GR) PSTP-A	CBL Amplitude (CBL) SCMT-CB
	0 gAPI 150	0 mV 10
0 ft 50	Transit Time for CBL (TT) SCMT-CB	CBL Amplitude (CBL) SCMT-CB
	200 us 400	0 mV 100
Cable Drag		Good Bond (GOBO)
Tool_Tot. Drag	Well Temperature (WTEP) PSTP-A	0 mV 10
	0 degF 300	• GoodBond From CBL to GOBO •
CCL Computed Amplitude (CCLC) PSTP-A		
-1 V 0.5		

Min	Amplitude	Max
200	us	1200

Absent	7.500	17.500	27.500	37.500	47.500	57.500	67.500	77.500	87.500	97.500
CBL Amplitude Mapping Image (0 - 100) SCMT-CB										

TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT VDL Image Format: Log (SCMT_VDL_Image_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-Jul-2017 04:54:42

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	10	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	5583	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	SCMT-CB	173.41	us
MMSA	MAP Minimum Sonic Amplitude	SCMT-CB	3.95	mV
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

ONE

Repeat

Software Version

Acquisition System	Version
Maxwell 2017 SP2	7.2.87778.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	529.96 ft	811.56 ft	23-Jul-2017 4:30:58 AM	23-Jul-2017 4:36:38 AM	ON	7.81 ft	Yes

All depths are referenced to toolstring zero

Log

Company:CAERUS OPERATING LLC Well:Chevron 12A-17

ONE: Log[4]:Up:S002

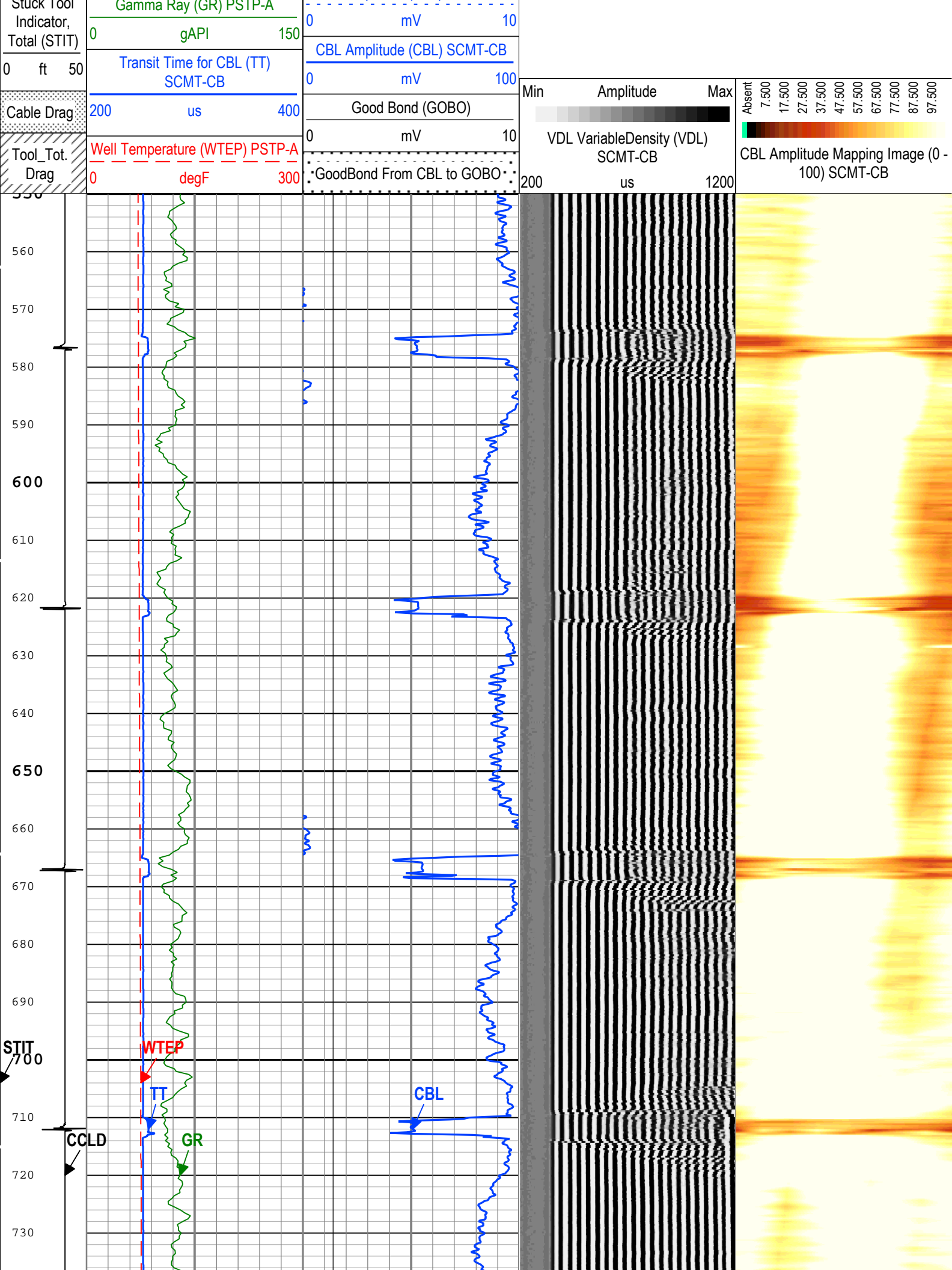
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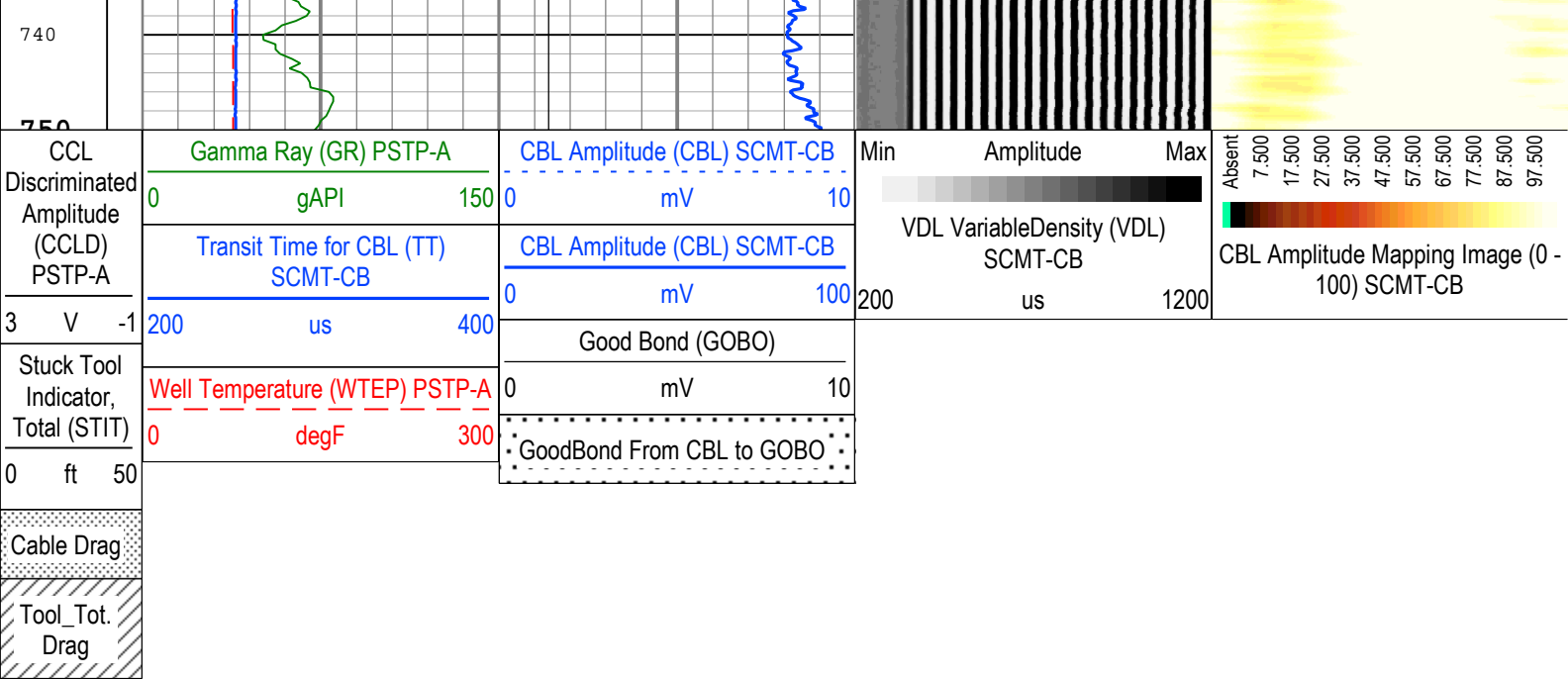
TIME_1900 - Time Marked every 60.00 (s)

CCL
Discriminated
Amplitude
(CCLD)
PSTP-A

3 V -1

CBL Amplitude (CBL) SCMT-CB





TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT VDL Image Format: Log (SCMT_VDL_Image) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 23-Jul-2017 04:54:51

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	10	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	5583	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	SCMT-CB	173.41	us
MMSA	MAP Minimum Sonic Amplitude	SCMT-CB	3.95	mV
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

Company: CAERUS OPERATING LLC

Schlumberger

Well: Chevron 12A-17

Field: Grand Valley

County: Garfield

State: Colorado

Slim Cement Mapping Tool

CBL-VDL